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ART. I. AN *Essay on* LARYNGITIS. By JOHN B. BECK, M. D.

IT is only very recently that inflammation of the larynx has become the subject of any special inquiry, and by many it has been supposed, that it was a disease wholly unknown until within a few years past. This supposition is however by no means probable. Being a disease of simple inflammation, there can be no doubt that it must have occurred, occasionally at least, from the earliest periods; and a review of their writings will convince us that it did not escape the attention of observing men even in the infancy of medical science. For the purpose of establishing this fact, as well as of facilitating the inquiries of those who may hereafter be tempted to the investigation of this interesting subject, I shall enter upon a few historical details.

Hippocrates appears to allude very distinctly to this disease in his book of Prognostics. He says, " those anginas are very dangerous and speedily fatal, which produce no sensible change in the fauces or in the throat, which cause great pain, and induce orthopnœa. They produce suffocation on the

first, second, third, or fourth day."* I am aware, that a writer of no common authority, Sir Gilbert Blane, has given it as his opinion that the disease here referred to is more probably the croup, because no mention is made of difficult deglutition.† This cannot, however, be justly considered as any solid objection to the supposition of the disease being laryngitis. It should be recollected, that it was not the object of the great father of medicine to give us in his "Prognostics," minute and detailed descriptions of diseases. He presents us with those great and prominent features only, from which a judgment may be formed concerning the general character and the final issue of diseases; and hence it will be found, that in more instances than one, some of the most distinctive symptoms are not at all brought into view. Illustrations of this might be adduced in abundance. It is unnecessary, however, to go beyond the very subject of which we are speaking for one perfectly satisfactory. In the aphorism succeeding the one just quoted, Hippocrates speaks of anginas accompanied with pain, tumour, and redness, and adds, that they are very fatal. Now, it is evident, that in these cases deglutition must be very greatly impeded, and yet no mention is made of this circumstance. The omission, therefore, of any notice of difficulty of deglutition, a symptom common to all the anginas, cannot be admitted as of the least weight in determining this question. As to the conjecture, that the disease alluded to by Hippocrates is croup, upon the very principle assumed by Sir Gilbert Blane, it is attended with even greater difficulties than the one to which he opposes it, inasmuch as nothing is said concerning cough, a symptom so characteristic of croup as to distinguish it from every other affection.

Cœlius Aurelianus, in treating of the various kinds of cynanche, describes one, which, if it does not answer in every respect to our ideas of laryngitis, yet resembles it more closely

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* The Prognostics and Crises of Hippocrates, translated from the Greek, &c. By H. W. Ducachet, M. D. &c. p. 68.

† Medico-chirurgical Transactions of London, Vol. VI. p. 143.

than any other disease. He represents it as unattended by any evident tumour or inflammation of the fauces, and as destroying life more speedily by strangulation than any of the other forms of this affection.*

By Celsus this species of angina is also distinctly recognised, when he says: "Interdum enim neque rubor, neque tumor ullus apparet," &c.† And afterwards, in noticing the symptoms which are common to this as well as to the form of angina attended with tumour, he adds: "Illis communia sunt; æger non cibum devorare, non potionem potest, spiritus ejus intercluditur. Levius est, ubi tumor tantummodo et rubor est, cætera non sequuntur."‡

Under the head of "Angina Interna," this disease is unquestionably described by Tulpius.§

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* "At si sine manifesto tumore fuerit passio, sequitur collorum tenuitas, cum extentione, atque subrectione inflexibili. Item vultus et oculorum cavitas: frontis extentio, color plumbeus, spirationis difficultas plurima, nullo, ut supra diximus, manifesto tumore, sive inflammatione aliqua apparente, neque in internis, neque in externis partibus, hebetudo plurima, atque imbecillitas ægrotantis; et celerrimus, vel acutus cum præfocatione, mortis effectus."—De morbis acutis et chronicis, &c. lib. iii. cap. 2. p. 182.

† Aurel. Cornel. Celsi de medicina. cap. iv. p. 196. Lugduni Batavorum. 1746.

‡ Ibid.

§ "Varia sunt anginæ genera, sed nullum perniciosius illo, quod produxit, vel vertebra introrsum luxata, vel inflammatio musculorum interioris laryngis. Quorum profundus tumor, si quidem coarctet angustum, asperæ arteriæ, caput; et ligulam illi insculptam (quæ sunt proxima vocis instrumenta) supprimitur non tantum vox; vel præcluditur quoque via spiritui vel potius ipsi vitæ. Quæ sine spiritu nulli diu, durabilis. Ac proinde non inconsiderate, Hippoc. lib. iii. prog. "latens angina vel primo, vel secundo die, lethalis."

He then adds the following case:

"Nauta pleni habitus, correptus intempesta nocte, ab urgente faucium angustia, traxit ilico spiritum adeo difficulter, ut excitata febre, et accenso gutture, incideret protinus in grave suspirium, spiritum turbidum, imo ipsam mortem. Cujus periculo, quo subtraharetur, nihil non molitum: sed urgentior fuit necessitas: et vehementior, ab incluso spiritu, strangulatus; quam ut juverint ipsum, vel sanguis maturè ex utroque brachio detractus,

Riverius has also left us a good account of it.*

Morgagni, in his great work on the "Seats and causes of Diseases," has furnished us with a history of the symptoms and morbid appearances on dissection of an unequivocal case of this disease.†

By Lommius a most admirable description has been given us of a species of angina, the identity of which with laryngitis can hardly be mistaken.‡

By Boerhaave this disease is described in a manner that must convince every person that he was not unacquainted with its nature. "If the larynx," says he, "chiefly be acutely inflamed, and the seat of this evil be in the white muscle of the glottis, and together in the fleshy muscles, whose office it

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vel incisa ranula: vel cucurbitulæ, gargarisationes, clysteres, cataplasmata: aliaque satis celeriter adhibita."—Nicolai Tulpii observationes medicæ. lib. i. cap. 51. p. 93. Amstelœdami. 1672.

* Si inflammatio interiores laryngis musculos occupet, synanche appellatur. In synanche maxima est respirationis læsio, ita ut ægri strangulari videantur. Fauces vehementer dolent, nullus tamen rubor aut tumor, neque in faucibus intus neque extra in cervice apparet. Hæc species anginæ omnium periculosissima est."—Riverii opera. lib. vii. cap. 7.

† Epist. xliv. 3.—Cook's Morgagni, Vol. I. p. 221. Am. ed.

‡ "Porro mortifera est, atque omnium horrendissima angina, citissime, que incidit, et necat, quæ neque in cervice, neque in faucibus quicquam conspicui, vel tumoris, vel ruboris exhibet, simulque summi doloris tormentum, et vehementem febrem, atque tantum non presentem suffocationem infert. Tum profecto oculi vertuntur, et rubent, et veluti iis qui strangulantur prominent: vox impedita nihil significat, et qualis catulorum est, tenuis editur: os apertum hiat: frigidi æris cupidum, ex eoque spumans saliva movetur: lingua exeritur, crebroque ut in anhelis propter laboris impetum equis, agitatur; potui datus liquor per nares remeat: labra livescunt: cervices rigidæ contractæ sunt: ipse æger totus inquietus est, crebro e cubili exilit, moleste supra dorsum, commodius recto collo atque capite cubat; videt, auditque obtuse, et præ suffocatione non intelligit quid audiat, quid dicat, aut gerat: tandem vero strangulatu, atque syncope oppressus, perit."—J. Lommii observationes, p. 99. Amstelœdami. 1738.

is to shut the same; there ariseth a terrible quinsey, which soon strangles. The signs are, a violent pain in the raising of the larynx, upon swallowing, increased upon speaking or hallooing; a very shrill and shrieking voice; a very hasty death, with the utmost anguish; and this is the worst kind of all, and not discernible by any outward signs."* In the treatment, he recommends copious and repeated bloodletting, purging, blisters, inhalation of warm vapours, and finally, bronchotomy.

Lieutaud divides anginas into four species: the inflammatory, catarrhal, gangrenous, and spasmodic. The last of these he thus defines: "Convulsive angina varies much from the other species of angina, both in the greater difficulty of breathing, and in swallowing being more impeded, so that even when erect, the patient can scarcely draw breath, while, from accurate examination, there appears no mark of redness, obstruction, or swelling, about the parts affected. Such is the violence of this disease, that it takes off some patients in a few hours."†

Mead, also, in his medical precepts, gives an account of this disease as a species of quinsey, which he calls a *strangulation of the fauces*. In this affection, he says, "all the nerves are convulsed, and the patient drops down dead suddenly. Of this sort (of quinsey) I have seen one instance, in which, though a large quantity of blood was drawn twice in six hours time, yet that evacuation was of no avail. Upon dissection, there was not even the least appearance of swelling or inflammation in the glands or muscles of the mouth and throat; but the blood-vessels were turgid every where with a thick blood. This disease, however rare," he adds, "is described by Hippocrates."‡

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* Aphorisms, 802. 809.

† Synopsis of the universal practice of medicine, &c. p. 465. translated by E. A. Atlee, M. D.

‡ Medical precepts and cautions. By Richard Mead, M. D. &c. p. 71.

Although it appears evident from the foregoing review that this disease is very far from being of such recent origin as some have supposed, and also that, under the generic term of angina, it has been described by a number of successive writers, yet it must be admitted, that it is only within a few years that its true nature and distinguishing features have been investigated with that accuracy and precision to which its great importance so justly entitle it. That this was not accomplished, by the ancients more particularly, is to be attributed entirely to the want of those anatomical investigations after death, which in later times have thrown such a flood of light over pathological inquiries.

In 1809, three cases of this disease were reported by Dr. Matthew Baillie to a society in London for the improvement of medical and chirurgical knowledge, and were published in their transactions in 1812. The whole paper is exceedingly interesting, and furnishes a fine specimen of that accuracy of observation and maturity of judgment which so eminently characterized that distinguished physician.* It is a fact worthy of remark in connexion with this paper, that Dr. Baillie states, that after a practice of more than twenty years, he had only met with two cases of the disease, and that he knew many physicians, of much longer experience, who had never met with even a single case.

In the same year in which the foregoing paper was published, appeared an account of some cases of this disease in the Medico-Chirurgical Transactions of London,† by Dr. Farre; and to this physician perhaps are we most indebted for awakening the attention of medical practitioners to this important subject. Since that time, several valuable contributions of cases and observations have appeared in relation to it, in the succeeding volumes of the Transactions of that

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* Transactions of a society for the improvement of medical and chirurgical knowledge, Vol. III. p. 275.

† Vol. III. p. 84.

Society,* as also in the periodical publications of Britain.† A brief notice is also taken of it by Dr. Marshall Hall,‡ in his treatise on diagnosis; and in the works of Armstrong,§ Bell,‖ and Bedingfield,¶ will be found many important facts and observations in relation to it.

In France, the disease was briefly but accurately noticed in the Dictionnaire des Sciences Medicales, which appeared in 1812.** In 1819, a memoir was published by M. Bayle, entitled, "Mémoire sur l'œdème de la glotte, ou angine laryngée œdémateuse."†† This is a very valuable production; but it relates entirely to that variety of the disease which is attended with effusion under the mucous membrane of the larynx.

In this country, we are not without our contributions on this interesting subject. So early as the year 1808, in a paper on the cynanche trachealis, by Dr. Dick of Virginia, this disease is distinctly alluded to. He speaks of it as the most inveterate species of the croup; and from its being confined to the larynx, he assigns to it the name of *Cynanche laryngæa*.‡‡ More recently, important and highly instructive cases of it have been recorded by Drs. Bliss§§ and Peixotto‖‖ of New-York, and Dr. Jackson¶¶ of Boston.

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* Medico-chirurgical Transactions. Vol. III. p. 84. 323. Vol. IV. p. 297. Vol. V. p. 156. Vol. VI. p. 133. 141. 221.

† Edinburgh Med. & Surg. Journal. Vol IX. p. 199. Vol. X. p. 284. Vol. XII. p. 205. 238. 247.

‡ On Diagnosis. By Marshall Hall, M. D. &c.

§ Practical Illustrations of Typhus Fever, by John Armstrong, p. 334. Am. ed.

‖ Surgical observations by Charles Bell. Part I. p. 14.

¶ A compendium of medical practice. By James Bedingfield. p. 51. Am. ed.

** Art. Angine.

†† Nouveau Journal de Medicine. Janvier 1819.

‡‡ Facts and observations relative to the disease of Cynanche Trachealis or Croup. By Dr. Elisha C. Dick of Alexandria.—Barton's Medical and Physical Journal. Third Supplement. p. 242.

§§ Transactions of the Physico-Medical Society of New-York. Vol. I. p. 115. N. Y. 1817.

‖‖ New-York Medical and Physical Journal. Vol. II. p. 436.

¶¶ The New-England Journal of Medicine and Surgery. Vol. X. p. 222.

Besides the cases and detached remarks just enumerated, I am not aware that any thing of importance has been done on this subject. At any rate, no general essay concerning it, as far as my knowledge extends, has yet been attempted. To supply, if possible, this defect in our medical literature, is the object of the present paper. An attempt to which I am the more emboldened, as the frequent occurrence of the disease in this city during the last year has afforded me no inconsiderable opportunities of becoming practically acquainted with it.

Character and symptoms. In its commencement this disease may be looked upon as purely local, and the first symptom by which it is usually ushered in, is a slight sense of soreness in the fauces, resembling what is commonly called a sore throat. As this is considered nothing more than the effect of an ordinary cold, it excites no alarm, and most commonly is slighted by the patient. There are no febrile symptoms present, and he generally finds himself well enough to attend to his ordinary business. If the fauces be examined, they will perhaps be found covered with a blush of inflammation, unaccompanied generally by any swelling of the tonsils or neighbouring parts. This state of the throat continuing for a day or two, the patient is suddenly seized with a sense of great uneasiness about the region of the larynx. The pain in the part is by no means acute, and the principal source of complaint is a feeling of stricture or obstruction about the passage of the larynx, through which the air passes in respiration. For the purpose of relieving this obstruction, frequent attempts are made to clear the throat by hawking, &c. The voice now becomes affected with greater or less hoarseness, according to the violence of the attack. Connected with this, there is labour in respiration and slight difficulty of deglutition. As the disease advances, sometimes in the course of a few hours, at others in a day or two, all the symptoms increase in force. The respiration becomes more impeded; the voice hoarser and more suppressed; the deglutition more difficult. Occasional fits of suffocation now come on, which sometimes last for several minutes, and occasion

the greatest distress. As these subside, the patient becomes easier, without, however, experiencing the least amelioration of the other symptoms. At longer or shorter intervals, the fits of suffocation are repeated, and at each repetition, they become more violent and distressing. Frequently they seize the patient during sleep. The anguish which is exhibited at this stage of the disease, and during the paroxysms of interrupted respiration, can better be imagined than described. The larynx is perceived in violent motion—the head is thrown back, and on the countenance is depicted the extremest agony; the eyes are wild and prominent—the mouth is open as if gasping for breath—the lips are pale—the tongue protrudes, and the voice is scarcely audible. In this situation, patients have not unfrequently attempted to end their sufferings by endeavouring to cut their throats.* It is evident that under such circumstances, life cannot be protracted very long, and the wretched victim, after a few convulsive efforts, expires from actual suffocation. Such is the general career of this disease, necessarily varying somewhat in individual cases, according to the violenee of the assault, and the peculiarities of the patient's constitution. In some instances not the slightest trace of inflammation is to be detected on examining the fauces; and with the exception of the local uneasiness about the larynx, there is nothing which indicates the imminent danger in which the patient is situated.

I have said nothing of the symptoms of general febrile or inflammatory excitement, as characterising this disease, because, although they are present in some cases, yet they are more generally wanting, and in the very worst cases they do not make their appearance from the commencement to the termination of the disorder. So striking, indeed, is this fact, that by Bayle it is considered as constituting a positive evidence of there being two distinct affections, to which the larynx

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* Cases of this kind are related by Bayle.

is subject; the one being an œdema of that organ, without fever or inflammatory symptoms; while the other is the inflammatory affection described by Bœrhaave and other authors. To me, however, there does not appear to be any just ground for this distinction. In all the cases recorded by Bayle, which are precisely similar to some of those of Baillie, Farre, &c., there is no question that the disease, primarily, consisted in a subacute inflammation of the mucous membrane of the larynx, terminating very speedily in effusions underneath it. Looking upon it in this point of view, it is perfectly easy to account for the absence of febrile symptoms, as well as for the fatal nature of these cases. The effusion relieves the local inflammation, and thus prevents reaction; at the same time that it mechanically closes the rima glottidis, and thus destroys the patient. If the inflammation of the laryngeal membrane on the other hand be greater, febrile symptoms may come on, and, instead of this passive infiltration in the subjacent membrane, the local inflammation may terminate in the effusion of coagulable lymph on the surface of the membrane, and in ulceration and destruction of the parts. If this view be correct, it is evident that the only difference in these cases, consists in the degree of inflammation, and the necessary consequences of it resulting from the peculiar structure of the larynx, and not as Bayle supposes, in any specific difference of disease.

The most usual duration of this disorder is from three to five days. In not a few cases, however, it has proved fatal within the first twenty-four hours, and in some, even during the first paroxysm of suffocation. By Bayle, instances are related in which it was protracted during the space of several weeks, and then terminated fatally. Such instances, however, I suspect are rare.

It may be considered as one of the striking peculiarities of laryngitis, that its attacks are confined to persons who have reached adult life. Such has, at least, been the case in almost every instance which has as yet been recorded. In some it has been at the advanced age of sixty, and even upwards.

Most usually, however, it occurs in the prime of life, between the years of puberty and forty-five or fifty. In a very few instances it has been observed in children. By Dr. Marshall Hall, cases of this kind are recorded.* But in these it should be recollected that the disease was induced by the accidental application of a powerfully stimulating cause to the parts themselves, in which of course, predisposition could have had no agency at all. With regard to other cases that have been adduced of its occurring in infancy and childhood, they are in many respects so unsatisfactory as scarcely to justify us in considering them as genuine cases of this disease.

Although not confined exclusively to either sex, yet males appear to be much more liable to inflammation of the larynx than females. This is a curious fact confirmed by the histories of the cases which have been recorded, and the most probable cause that can be assigned for it is the greater development of the larynx, which is known to exist in the male sex.†

From the frequency of inflammatory affections, and especially those of the throat in the autumn and winter, it might naturally be supposed that this disorder would be more likely to occur in those seasons, than in any other portion of the year; and this has been verified by the result of observation. It may, however, take place at any period of the year, if the patient be exposed to sudden transitions of temperature, or to an atmosphere loaded with moisture.

In many, perhaps in a majority of cases, it has been remarked that the patients had been previously subject to catarrh, quinsey, &c. From the vicinity of the organs affected in these complaints, it can readily be conceived how

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* Medico-Chirurgical Transactions, vol. XII.

† "*Children, women, and eunuchs, in whom the larynx is proportionally smaller than in the adult man,* have also naturally the voice much less intense than his." Summary of Physiology, by F. Magendie. Translated by J. Revere, M. D. p. 128.

inflammation of them would predispose the larynx to be similarly affected.

Appearances on Dissection. On opening the body of a person who has died of Laryngitis, the tonsils and the velum pendulum palati will be found perhaps slightly inflamed. In some instances the posterior and upper portion of the tongue is also somewhat inflamed. The epiglottis most generally exhibits the evidences of high inflammation, and is much thickened; it frequently stands erect, so as to leave the cavity of the larynx almost entirely uncovered. In the larynx various morbid appearances present themselves, depending upon the violence and duration of the previous disease. In some instances no other evidences of disease are observable, besides a simple redness and thickening of the mucous membrane of the larynx. This thickening is frequently so great as nearly to obliterate the cavity of the glottis.

In other cases, together with the inflamed condition of the mucous membrane of the larynx, there is found an effusion of serum underneath it so great as completely to close the rima glottidis.

In other cases again, the inflammation of the membrane of the larynx terminates in effusion of lymph upon its external surface, by which the passage of the glottis is either completely closed, or very much diminished in size.

Occasionally purulent matter has been detected on the larynx, and in one case an extensive abscess was found between the mucous membrane, and the muscles of the larynx. Generally, the trachea is unaffected. In some cases, however, slight traces of previous inflammation are discovered. It is not followed by effusion, and in no instance, I believe, has any thing like the croupy membrane been formed.

The lungs are also more or less affected. In two of the cases recorded by Dr. Baillie, "the lungs did not collapse upon taking off the sternum." In one of Dr. Farre's cases, the lungs were slightly congested, and in the other, "there was some accumulation of mucus in the cells of the lungs, and a slight effusion of serum into their reticular texture. The

left pleura partially adhered, and the cavities contained rather more fluid then is natural to them." By Bayle, too, it is stated that the lungs were found gorged with blood. By the same writer, the blood is asserted to be darker coloured, and more difficult to coagulate than healthy blood. These appearances are very justly ascribed to the deficiency of oxygen, with which the lungs are supplied, and the consequent superabundance of carbon in the blood ; and it is to this interruption in the process of respiration, that death in this disease is to be ascribed. What confirms this opinion, is the fact that the condition of the lungs resembles in every respect that of those who die in consequence of suspended respiration from other causes.

Causes. Among the causes capable of producing this disease, may be mentioned, sudden variations of temperature—diseases of some of the neighbouring organs—the application of a powerful stimulus to the part itself.

Sudden variations of temperature. As of all other inflammatory disorders, this is unquestionably the most common cause of laryngitis. Most of the cases on record have arisen from imprudent exposure of the body. A humid atmosphere would also seem to be more particularly favourable to the development of the disease. This was strikingly confirmed in this city in 1823, when it may almost be said to have prevailed epidemically.

Diseases of the neighbouring organs. From the contiguity of the tonsils, pharynx, &c. to the larynx, it is easy to see how affections of the former may involve the latter. There is every reason to believe, that even ordinary inflammation of the tonsils sometimes proves suddenly fatal by the diseased action extending to the larynx. That this is particularly the case in the malignant form of the disease, (cynanche maligna) will scarcely admit of a question. In those cases of the disease which sometimes occur, in which the patient dies suddenly and unexpectedly, this occurrence may generally be traced to the extension of diseased action to the larynx.

That disease of the pharynx may produce a subsequent af-

fection of the larynx, is established by several cases on record. Mr. Bedingfield relates the case of a woman aged 30, who, during convalesence from pneumonia, was attacked with difficulty of deglutition and respiration, hoarseness and suppression of voice, cough, &c. On examining the fauces, no appearance of disease could be detected. After remaining in this condition for twelve weeks, the patient died, and on dissection, the larynx was found inflamed, and the membrane so much thickened, as to diminish very considerably the rima glottidis. On continuing the dissection, it was discovered that the cause of this mischief in the larynx, was a tumour in shape and size resembling a filberd, situated at the anterior pharynx, just below the rima glottidis.* By its pressure, it had produced ulceration in the pharynx, as well as the morbid appearance just described in the larynx.

Mr. Charles Bell gives the history of a case of diseased pharynx, which, after about a month's continuance, spread to the larynx; and towards the close of the disease, this seemed to be the part mainly affected. After a protracted sickness of nearly three months, the patient, a woman about thirty-five years old, died, and on dissection, the pharynx, and beginning of the œsophagus, were found studded with schirrous tumours, so as nearly to close the passage. "Where the mucous membrane was reflected over the glottis into the trachea, it was found much thickened, white, and dense; and on looking through the larynx from below, two white tumours were seen projecting from the sides of the tube. These left a triangular opening so small, that it was wonderful this poor woman could breathe so long."†

An abscess in the neighbourhood of the larynx, has been known to produce the symptoms of laryngitis. A case is mentioned in the Edinburgh Medical and Surgical Journal, in which the sac of an abscess was found attached to the un-

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* A Compendium of Medical Practice, by James Bedingfield, p. 51.

† Surgical Observations, Part I. by Charles Bell, p. 53.

der surface of the muscles covering the thyroid cartilage, being reflected over that cartilage, and bounding nearly the extent of the os hyoides. It contained about half an ounce of pus. It produced all the symptoms of inflammation of the larynx, and the patient died of it. The trachea and larynx, on dissection, did not discover any unusual vascularity. They contained only some common mucus, the sacculi laryngis were filled with pus.*

In addition to those already mentioned, there is another affection of a neighbouring organ which has in some rare cases given birth to all the symptoms of laryngitis, and that is, aneurism of the large blood-vessels near this part. Bayle relates the particulars of a case in which these symptoms were occasioned by an aneurism of the aorta pressing upon the trachea. On dissection, the larynx was ascertained to be perfectly healthy.† Mr. Lawrence furnishes us with an instance in which similar effects were produced by an aneurism of the arteria innominata.‡

The application of a powerful stimulus to the part. The stimulus to which I allude is boiling water or steam. In the Medico-chirurgical Transactions of London are related several interesting cases of children who, by mistake, attempted to drink boiling water from the spout of a tea-kettle. From the report of the writer, it appears that the effects were not, as might have been expected, inflammation of the œsophagus and stomach, but inflammation of the glottis and larynx. In the New-York Hospital, as I am informed by the former house-surgeon, Dr. King, cases of a similar character have occurred in several persons who were scalded on board of one of our steam-boats, from the bursting of the boiler of the vessel. The inhalation of the hot steam produced all the symptoms of acute laryngitis.

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* Edin. Med. and Surg. Jour. Vol. XVI. p. 156.

† Nouveau Journal de Médicine, Janvier 1819, p. 51.

‡ Medico-Chirurgical Transactions, Vol. VI. p. 227.

Diagnosis. As laryngitis destroys life with great rapidity, the physician has frequently but a very short period allowed him in which to put forth the resources of his art for the rescue of his patient. To enable him to use the most prompt and efficacious means for this purpose, it is necessary that it should be clearly distinguished from those of the neighbouring organs, with which it may be confounded.

Tonsillitis. In this disease both the respiration and deglutition are sometimes seriously affected, but as these are occasioned entirely by the inflammation and enlargement of the tonsils, it may readily be distinguished by an inspection of the fauces. In laryngitis, no tumour or swelling of the tonsils is observed, and the difficulty of respiration is not merely greater, but arises from a cause entirely different.

Pharyngitis. The freedom of the respiration in this complaint, while the difficulty of swallowing is exceedingly great, sufficiently distinguishes it from laryngitis.

Trachitis. This is the disease most liable to be confounded with laryngitis, and which it is of the most importance correctly to distinguish, inasmuch as upon it may depend our decision in relation to one of the most essential means of relief, viz. the operation of laryngotomy. Although these two diseases have several symptoms in common, yet I believe, an attentive observer will experience little difficulty in recognising the existence of either, if the symptoms are tolerably well marked. Those which distinguish laryngitis are the soreness of the throat, and the blush of inflammation observed in the fauces, in the onset of the disease—the early and great suppression of the voice—difficulty of deglutition—and the seat of distress being the region of the larynx. In all of these respects it differs very strikingly from croup, in which there is no previous affection of the fauces—no loss of voice—no difficulty of deglutition. In croup, moreover, the disease extends down through the trachea into the lungs, and there is always present that peculiar,

ringing cough, which is at once recognised by those who have ever heard it.*

Treatment. As this disease consists in an inflammation of the larynx, terminating in effusions, which so far close the rima glottidis as to interrupt regular and healthy respiration, our indications of cure seem to be simple and clear. They are, in the first place, to arrest, if possible, the progress of inflammation, and thus prevent effusion; and, if we should fail in this object, in the second place, by means of an artificial opening in the trachea, to enable the patient to breathe until the obstructions in the larynx may be removed, either by the process of absorption, or by the aid of medicine. Our means for accomplishing the first of these objects are bloodletting—emetics—cathartics—blisters—and mercury. The second requires the operation of tracheotomy.

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* The disease of which General Washington died, although denominated croup by many, I am inclined to consider as laryngitis. The following imperfect account of it is taken from Marshall's Life. It is to be regretted that nothing more satisfactory has been preserved.

"On Friday, the 13th of December, 1799, while attending to some improvements upon his estate, he was exposed to a light rain, by which his neck and hair became wet. Unapprehensive of danger from this circumstance, he passed the afternoon in his usual manner; but in the night, he was seized with an inflammatory affection of the windpipe. The disease commenced with a violent ague, accompanied with some pain in the upper and fore part of the throat, a sense of stricture in the same part, a cough, and a difficult rather than a painful deglutition, which were soon succeeded by fever, and a quick and laborious respiration.

Believing bloodletting to be necessary, he procured a bleeder, who took from his arm twelve or fourteen ounces of blood, but he would not permit a messenger to be dispatched for his family physician until the appearance of day. About eleven in the morning, Dr. Craik arrived; and perceiving the extreme danger of the case, requested that two consulting physicians should be immediately sent for. The utmost exertions of medical skill were applied in vain. The powers of life were manifestly yielding to the force of the disorder; speaking, which was painful from the beginning, became almost impracticable; respiration became more and more contracted and imperfect; until half past eleven, on Saturday night, when, retaining the full possession of his intellect, he expired without a struggle."—*Marshall's Life of Washington*, Vol. V. p. 761, 2.

Although the general principles of treating this disease appear to be thus obvious, yet the little success which has hitherto attended the management of it, even in the hands of the most distinguished professional men, is a sufficient apology for entering upon this part of our subject somewhat more in detail.

Bloodletting. Although almost every writer who has treated of this subject has assigned the first place to bloodletting, and although there are few practitioners who, when called to a case, would not immediately have recourse to this powerful agent; yet it must be conceded, that it does not appear, as the result of impartial experience, that this remedy, even when very liberally employed, has been attended with that decided advantage, which might naturally have been expected. Dr. Armstrong informs us, that out of six cases, there was only one in which venesection was conspicuously serviceable; and in almost all the fatal cases that are recorded, it will be found that this remedy has been pretty freely used. Conceding all this, it does not justify the unfavourable inference which has been drawn by some against the use of bloodletting. Like every other agent in medicine, bloodletting differs entirely in its effects, according to the extent to which it is carried, as well as according to the stage of the disorder in which it is used. And I am inclined to believe, as well from theory as from experience, that in many instances of this disease, where the use of venesection has not been attended with any beneficial consequences, it may be attributed either to its not having been carried to a sufficient extent, or to its having been used at that stage of the disorder when organic changes had already taken place, and when, of course, instead of doing any good, it must be productive of positive injury. In speaking of the extent to which bloodletting ought to be pushed, I do not refer at all to the *absolute quantity* of blood which may be drawn, but entirely to the *effect* produced upon the system. This effect is syncope; and in all cases where the condition of the patient does not absolutely contra-indicate the measure, to bring about this should

be the object of the practitioner. The insidious nature of the first periods of this disease, and the rapid progress which it makes to effusion, ought to convince the medical attendant that nothing short of the boldest treatment can rescue his patient from destruction. By ordinary bloodletting it is scarcely possible to reach the seat of disease, remote and circumscribed as it is in the larynx. Even supposing, however, that such a bleeding could reach it, its only effect would be to *moderate* the action in the part. That it could not *arrest* its progress must be evident, when it is recollected how very slight a degree of inflammation in the larynx will produce all the dreadful consequences attendant upon this affection.

The very same reasons which induce me to consider that the ordinary abstraction of blood can be attended with no great benefit in this disease, convince me of the high and unequivocal advantages which result from carrying it ad deliquium. When this effect is produced, the most distant as well as the minutest parts of the system come within the sphere of its influence—it not merely moderates, but it suspends and alters existing actions, at the same time that it relaxes spasm, a symptom which, in a greater or less degree, always accompanies inflammation of the larynx.

In those unfortunate cases where effusion has already taken place under the mucous membrane of the larynx, constituting the œdematous condition of these parts, it is evident that bleeding, however practised, can be of but little service; yet even here, as it is impossible to know positively that such effusion has actually occurred, it may be considered in every respect as the safest practice, and certainly the one promising the greatest chance of relief, to have recourse to a single bleeding, which shall be felt at once throughout the system, rather than to repeated bleedings, the only effect of which must be to weaken and finally exhaust the strength of the patient.

There is another consideration, too, in connexion with this point, of considerable importance. If it shall be found, after bleeding ad deliquium, that the symptoms are not mitigated,

it may with great probability be inferred that such effusion has already taken place, and that other means of relief must accordingly be resorted to. The value of any test by which to judge of the actual state of the parts and of the progress which the disease has made, can only be appreciated by those to whose lot it has fallen to witness the march of this terrific disorder. No such inference can be drawn from the effect of bleeding, which is not carried to the extent already proposed.

Whether the view that has just been taken be correct or not, the result of experience is most decidedly in favour of this practice. It is a highly interesting fact, that of all the cases on record, not one will, I believe, be found to have proved fatal, in which bleeding was carried to the extent which has been suggested.

As the object in this complaint ought to be, to induce syncope with the least sacrifice of the patient's strength, it is proper to suggest, that he should be bled while standing, and from a large orifice.

As auxiliaries to general depletion, the local abstraction of blood from the throat by leeches, scarifications, &c., may be used with advantage, especially where it is not considered advisable to carry general bleeding to any further extent.

Emetics. Next to blood-letting, emetics are the remedies best calculated to afford prompt and decided relief; and they do so, not merely by the relaxing effects which they have upon the whole system, but by the copious secretions which they produce from the mouth and fauces. By most writers they do not seem, however, to have been treated with any thing like the importance justly due to them. In most of the individual cases of the disease which have been published, especially those in Great Britain, emetics are not to be found among the articles which were resorted to. Dr. Armstrong is the only modern writer who insists upon their use in a manner at all proportioned to their value; and he states that he was induced to try them in the commencement of the disorder, from the want of success which had previously attended him in several cases, where he had relied upon copious blood-

letting. His practice consisted in giving tartarized antimony combined with ipecacuanha, in repeated doses, until free and frequent vomiting took place. "No circumstance," he adds, "in my professional life ever gratified me more, than the great and sudden relief which the vomiting afforded; in reality it removed all the urgent symptoms at the time, and being excited as soon as even the slightest signs of stricture returned, at last completed the recovery."* Subsequent experience seems to have convinced this very accomplished physician, that in cases where the inflammation runs high, it is not perfectly safe to rely upon emetics alone, to the exclusion of the ordinary means for subduing inflammatory action. That cases may frequently occur, in which emetics, unaided by other remedies, may be fully adequate to the removal of the disease is unquestionable, yet as a general rule, it may be considered as the soundest practice, in every point of view, to premise a copious bleeding, which if it produces no precise effect upon the disease itself, yet is the most efficacious means of preparing the system for the prompt and salutary operation of emetics, an object certainly of very great consequence, and one which is not sufficiently regarded in practice.

Purgatives. Besides unloading the intestinal canal of whatever offensive matter may be present, purgatives may prove beneficial, by lowering the general action of the system, and creating a new centre of irritation, and thereby diverting the flow of blood from the parts labouring under disease. It is in this latter way chiefly that purgatives prove of use in laryngitis. Too much dependence, however, should not be placed upon them, inasmuch as they can at best exercise but a remote influence over the disease, while, from the slowness of their operation, much valuable time may be lost in securing the safety of the patient by other and more efficacious means.

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* Practical Illustrations of typhus fever, &c. by John Armstrong, M. D. &c. p. 336. Am. ed.

Blisters. It has become so much a matter of course to apply blisters in all cases of local inflammation, that to call in question the propriety or efficacy of the practice, may appear to savour of skepticism, in relation to remedies sanctioned by time and experience. Notwithstanding this, I cannot conceal the expression of my belief that in the disease under consideration, blisters have not proved of that unequivocal utility which might naturally have been expected. In almost all the cases which have terminated fatally, blisters have been used, and in some to a very unexampled extent. It is possible, however, that the want of success may have been owing to other circumstances; and it is proper to state, that in some successful cases *very large* blisters were applied. By Sir Gilbert Blane this fact is much dwelt upon in recommending this remedy. Admitting blisters to be proper in laryngitis, it is of consequence to determine at what stage of the disease they are most proper, and where they should be applied.

From the view which has been taken of this disease, it is perfectly obvious that if they are to do any good at all, they must be used very early. In every point of view, it is the best practice to apply them immediately after venesection. The next point to be determined is, whether they should be applied directly over the part affected, or at a distance from it. If the effects of a blister be, as they undoubtedly are, to excite local irritation, and, as a consequence of this, to produce a current of fluids to the blistered part, then it would seem to be self-evident, that they should never be placed too near the original seat of disease, as their effect must necessarily be that of increasing the afflux of the fluids upon organs already labouring and oppressed from this very cause. In the case of laryngitis, from the vicinity of the diseased organ to the surface over it, it appears plain that the application of a blister to the throat must increase the determination of blood to the larynx; and if this is the fact, the practice is very clearly improper. Independently of this consideration, the application of a blister to the throat may be rendered objectionable by its interfering with the use

of leeches. The situations most appropriate, perhaps, for this remedy, are the chest, abdomen, or the insides of the thighs; and that some substantial good may be derived from them, they should be of a large size, and kept running during the disease.

As the disease of which we are speaking is frequently exceedingly rapid in its course, it is of importance in these cases that vesication may be excited as speedily as possible. For this purpose, instead of ordinary blistering, the same effect may be produced either by scalding water or by nitric acid.

Calomel. After the use of depletion and emetics, to break the violence of the disease, there is no article within the knowledge of our art which can be trusted to with such just confidence for accomplishing a cure as calomel. To be effectual, however, it must not be used with a timid hand. From the great rapidity with which the disease frequently runs its career, it is evident, that unless introduced with such decision as to bring the system speedily under its influence, mercury can be of no service. It should be commenced with, therefore, early in the disease, and should be unwaveringly persisted in, until this object is accomplished. There is nothing which can supply its place, and scarcely any symptom which can contra-indicate its use. The high general inflammatory action characterising some of the phlegmasiæ, and which renders the use of mercury so frequently improper, is, as we have seen, very seldom present in laryngitis; and if it should be in the commencement of the disorder, it will have been sufficiently subdued by the previous bleeding and emetics. On this ground, therefore, nothing is to be apprehended from its use. Besides this, another advantage attending it is, that it cannot interfere with a single other measure that may be thought advisable. With regard to the extent to which mercury should be carried, I would insist in an especial manner upon the necessity of producing free ptyalism in every case where it can be effected. Independently of its being the only certain criterion by which to judge that the system is under its influence, the greatest advantages are to be expected from the copious secretions

which are thus produced from the glands of the mouth and throat. At any rate, whether it be explained upon this principle or not, it is only when carried to this extent, that calomel has proved eminently successful. In many cases in which this remedy has been used, without however occasioning salivation, the disease has nevertheless terminated fatally. Yet I have not met with a single one which did not end favourably in which the mouth became affected.

Tracheotomy. When all our efforts at subduing the inflammation in the larynx have failed, and we find the obstructions to respiration constantly increasing, the only resource left is to make an artificial opening into the windpipe. That this may be done without the least hazard has been proved by multiplied experiments,* and the success which has recently attended its employment in laryngitis, should encourage us to a repetition of it in all cases where other means have proved ineffectual. There are two circumstances more particularly deserving of attention in relation to this operation, and on which its success may be said principally to depend. The first is, that it should not be delayed until the last stages of the disease, when the patient is already sinking under the prostrating effects of long impeded respiration. To perform the operation under these circumstances, may indeed display the dexterity of the surgeon, but it can be of no benefit to the suffering patient. Whoever has attentively read the histories of the cases which are upon record, cannot but have been forcibly struck with the truth of this remark. The other circumstance to which I allude, is the size of the opening made into the trachea. In the ordinary way in which the operation is performed, the orifice speedily closes, or if kept open by a canula, the irritation occasioned by the presence of a foreign body would be such as to produce great irritation in the parts, and thus jeopardize its ultimate success. To obviate these

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* For an elaborate detail of facts on this point, see an interesting paper by William Lawrence, Esq. in the Medico-Chirurgical Transactions of London. Vol. VI. p. 221.

effects, Mr. Carmichael, in a recent case of laryngitis, made a large opening into the trachea, by cutting away portions of the rings. The complete success which attended the case, together with the just reasoning of that distinguished surgeon in relation to it, is sufficient to establish it as a great improvement in the mode of performing this operation.*

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* I cannot do better than quote the interesting account of this operation as furnished by Mr. Carmichael.

"Having ascertained the lower edge of the thyroid gland, an incision, about an inch and a-half in length, was made through the integuments from this point to within a finger's breadth of the sternum. The incision was continued between the sterno-hyoidei and the sterno-thyroidei muscles, until the rings of the trachea were fairly exposed. This momentous part of the operation was performed in a few seconds; for with the aid of my assistants, who separated the lips of the wound by means of retractors, I was enabled to see the parts which it was necessary to divide; and by the fore-finger of the left hand I successively felt each part previous to the application of the knife, the edge of which, after the division of the skin, was directed constantly upwards during the subsequent parts of the operation; and these precautions were a sufficient security against wounding the arteria innominata, which sometimes rises above the sternum, or from dividing any known or anomalous arterial branch of magnitude which might course in front of the trachea.

"This was all happily accomplished, with very little delay, and the loss of a very few drops of blood, notwithstanding the difficulty which the perpetual motion of the trachea opposes in a person incessantly gasping for breath: two, or perhaps three, of the rings of the trachea were then divided from below upwards, and this opening was immediately widened by means of a large pair of sharp-pointed scissors, such as I employ for the operation of hare-lip. With these I had provided myself, knowing from previous operations the difficulty of removing by the knife a slip of the rings of the trachea, as recommended by Mr. Lawrence. Some little address is necessary in performing this part of the operation. The sharp point of one blade was introduced at the lowest part of the opening in the trachea, and directed outward so far as to admit, on the closing of the blades, of the division of an extent of the tracheal rings, equal to one half of the opening already made in them; the flap thus made was laid hold of by a pair of dissecting forceps; the point of the scissors was again introduced into the trachea, where the last incision terminated, and carried inwards towards the central opening. Similar incisions in the same manner

In concluding these observations, it was my original intention to have added a series of cases. The great length, however, of the preceding paper, prevents me from giving more than the three following. For the particulars of the first I am indebted to my friend, Richard K. Hoffman, M. D. of the United States Navy. It is a melancholy instance of the overwhelming rapidity with which the disease sometimes destroys its victim. The second case occurred in the person of my colleague, Dr. John W. Francis, and is particularly interesting as presenting more of the general inflammatory, as well as protracted character, than is usually met with in this disorder. The third is a rare and curious case, translated from the memoir of M. Bayle.

CASE I.

At one P. M. on the 10th April, 1823, a servant called at my office, requesting me to hasten to Mr. M. whom she reported to be choking to death. Taking with me some emetic medicines, a probang, and polypus forceps, which were at hand, I immediately attended. On entering the room, I was struck with the extreme anxiety expressed on the patient's countenance. His neck was denuded—the larynx moving violently up and down—his eyes staring—face flushed, and covered with drops of sweat. His whole frame was agitated, and the difficulty of breathing appeared almost insufferable.

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were made on the opposite side, and a diamond-shaped opening, capable of admitting the point of the little finger with ease, was left in the trachea.

"The patient coughed up a large quantity of thick viscid phlegm through the opening, and seemed so much relieved, that the appearance of suffocation and excessive anxiety which her countenance displayed previous to the operation, immediately disappeared. I am satisfied that if the operation had been confined in this, as well as in other instances which have occurred to me, to a mere division of the rings of the trachea, that no beneficial result could have followed the measure; and that even the introduction of a tube, which is objectionable on two accounts, would not be attended with any advantage; for, first, a tube excites intolerable irritation, with violent fits of coughing; and, secondly, the apertures in it cannot be sufficiently large to permit the expulsion of the viscid phlegm which accumulates in most of those cases where Tracheotomy is necessary."—Transactions of the College of Physicians of Ireland, Vol. IV. p. 312.

He pointed to a glass, containing a mixture of Cayenne pepper and vinegar, and applying his hand to the throat, reiterated, in a hurried whisper, 'Can't breathe, can't breathe—Cayenne pepper,' &c. On attempting to swallow a little water which was handed him, it was convulsively ejected from the mouth. I seated him near the window to examine the fauces; they were rather more red and tumid than natural, but presented to the view no other morbid nor extraneous impediment to respiration. A vein was opened in each arm (using his cravats for ligatures) and bled freely; but death supervened from suffocation, with a rapidity as great as if a strict ligature had been made on the trachea.

In the short interval, not exceeding ten or fifteen minutes, from the time of my arrival, until the fatal termination of the case, no account of the previous symptoms could be obtained. It was now ascertained that he had complained of soreness of the throat the evening before, as well as at breakfast, but was not prevented from engaging in his mercantile pursuits that morning. Experiencing some difficulty of breathing, however, he returned home earlier than usual for dinner, and erroneously believing his complaint arose from the palate being down, resorted to the mixture of Cayenne pepper for relief a few moments before I was called in.

On the following morning, the parts concerned in the disease, as well as the pharynx, fleshy palate and tongue, were detached for examination. The mucous membrane of the fauces appeared slightly inflamed, while that of the rima glottidis especially, was so distended by a visible congestion of the blood vessels, together with an effusion of serum in the subjacent cellular texture, as effectually to conceal and shut up the passage to the windpipe. This inflamed and œdematous condition of the mucous membrane was apparent throughout the larynx, and traces of inflammation extended down the trachea, as far as its bifurcation, where our researches terminated.

The subject was in the prime of life, of a strong constitution, sanguine temperament, and of a plethoric habit of body.

It was a source of satisfaction to the numerous relatives of the deceased, that two gentlemen of the highest eminence in the profession arrived almost simultaneously with myself.

CASE II.

Dr. J. W. F. of a sanguine temperament, and of a robust constitution, had been complaining for three or four days of soreness about the fauces, accompanied with some degree of hoarseness and continual sense of thirst. These symptoms were accompanied with considerable difficulty in deglutition, unattended, however, by any cough or expectoration. On the morning of the 17th of Nov. 1823, on examining the throat, I found the fauces inflamed, but no tumefaction. About the middle of the day, the patient was seized with an increased sense of tightness about the throat, attended with pain, great anxiety in breathing, difficulty of swallowing, and a sense of strangulation. After continuing for a few moments, these symptoms gradually abated, but were again renewed with increased violence after a short interval. Blood was immediately taken to the amount of forty ounces, after which an emetic of tartarized antimony and ipecacuanha, was administered. The emetic produced no effect. Sulphate of soda, oz.j. was shortly after ordered.

7 P. M. No abatement of the symptoms; pulse full and strong, and about 120 in a minute; skin hot and dry; the difficulty of respiration, as well as of deglutition, still continuing, blood was again drawn to the amount of oz. xx.

18th. 9 A. M. During the night, the patient had suffered great restlessness, accompanied with much local distress about the throat. This morning his uneasiness was excessive, in consequence of the difficulty of his respiration, and the frequent returns of the sense of strangulation. On pressing the region of the larynx externally, considerable soreness was complained of. The pulse still remaining full and strong, the patient was again bled oz. xvi. and put upon the use of the solution of tartar emetic. A blister was also applied to the throat.

7 P. M. No abatement in the force or frequency of the pulse having taken place, oz. xvi. of blood were drawn.

19th.—9 A. M.—No amendment—general excitement of the system still great—pulse upwards of 100, and full.—v. s. ℥xvi.—leeches to the throat, and a blister to the chest. The antimonial solution still continued.

In the afternoon, ℥xvi. more of blood were taken; and in the evening ten grains of calomel were ordered.

20th.—9 A. M.—Little or no abatement of the general or local symptoms.—v. s. ℥xvi.—calomel and James's powder, in the proportion of four grains of the former and six of the latter, were directed to be given every three hours.

21st.—No alteration of consequence in the condition of the patient—continue calomel and James's powder.

22d.—The excitement in the system being evidently increased, it was deemed proper to abstract more blood: ℥xii. were accordingly taken—the calomel was still continued.

23d.—The patient states that he feels a slight moisture in the mouth and throat, the first which he has experienced since his attack. In the course of the day the gums became affected. The use of the mercury was now stopped, and another blister ordered to be applied to the throat.

24th.—Pulse still greatly excited: 120 to 130 in a minute.—v. s. ℥xvi.—tart. emet. solution every two hours; at night, Dover's powder grs. x.

25th.—Rather better—continue tart. ant. and renew blister to chest.

26th.—Considerably better during the day.

27th.—During the night, the patient was attacked with a return of the fits of strangulation; they were repeated every five or ten minutes; and to such a degree as almost to threaten the immediate extinction of life. An emetic of tart. ant. and ipecac. was instantly given, without producing any effect. In half an hour another was administered. No vomiting was induced. Great relaxation, however, ensued shortly after, which was succeeded by a profuse perspiration, affording decided relief. The spasms gradually subsided on this effect being produced.

10 A. M.—v. s. ℥xvi. The patient fainted from this bleed-

ing, the first effect of the kind which had yet taken place, notwithstanding the numerous and copious abstractions of blood. After this an emetic of sulph. zinci ʒss. No effect by vomiting—produced great distress, and pretty copious secretion from the mouth.

For the purpose of keeping up the relaxation induced by the last venesection, tart. emet. gr. $\frac{1}{4}$. ipecac. gr. ij. were ordered every two hours.

28th.—Rather better—pulse, however, still 120. continue the tart. emet. and ipecac.

29th.—Much better—pulse softer, 100—skin moist—expectoration very copious—slight cough—mercurial fætor very great. Discontinue the tart. emet. and ipecac.—a dose of senna and manna was ordered, to open the bowels.

From this time he continued gradually to improve. The expectoration, however, remained very profuse for about two or three weeks. After that it subsided, and the patient recovered his usual health. His voice, however, has never recovered its accustomed tone; and, after a year's interval, it is still hoarser than natural. This case was attended by Drs. Hosack, Post, McLean, and the writer.

CASE III.

Aneurism of the Aorta, simulating the Œdema of the Glottis. Stephen Pillet, cartwright, aged 48 years, of high stature, and very robust complexion, having his muscles well developed, countenance naturally pale, the beard and the hair on the head of a deep brown, entered the Charité on the 29th of November, 1808. He had then been sick six months, according to his own account, in consequence of a checked perspiration. He coughed and expectorated a great quantity of glairy and soapy matter; his voice was hoarse, his respiration was troublesome and noisy. Each inspiration was attended with a sort of hissing, or rather a particular sound, which might have been compared, if it had been a little more acute, to that which is produced in blowing strongly upon a hautboy; expiration, on the other hand, was free and easy. The patient experienced often a slight pain in the larynx; the least

exercise considerably increased the dyspnoea, without causing, however, any palpitations of the heart. The pulse was sufficiently regular in the left arm, but none was perceptible in the night. This peculiarity was known to the patient, who regarded it as natural. The digestive functions were properly exercised, his size was little diminished, his flesh was firm, and without the appearance of infiltration. Six weeks before his entrance into the hospital, a seton had been made in the back of his neck, which had appeared to diminish somewhat the dyspnœa and the hoarseness ; about the middle of December it was closed.

The only means which were employed, were the milder aperient drinks, and the theriac in small doses.

Towards the middle of January, the cough and expectoration were sensibly lessened ; respiration seemed to be somewhat more free, and less noisy ; the patient walked in the yard of the hospital during the whole day, without materially increasing the dyspnœa ; he ate with a voracious appetite ; he became thin, nevertheless, but slowly ; he had no fever at any time, nor even any heat of skin ; he constantly felt an uneasiness, and sometimes a little pain in the larynx.

On the twentieth of January, he complained of a slight sore throat, which he had had for some time ; and in reply to questions put to him, he declared that he had suffered under several venereal affections. At the same time it was thought that some redness could be perceived in the veil of the palate and about the larynx. All these considerations determined the physicians to prescribe a gargle, together with a spoonful of the liquor of Van Swieten, which did not, however, produce any effect.

On the 26th, Pillet, having dined as ordinary, was seized a short time after, with a violent paroxysm of orthopnœa ; he could not breathe, unless when seated, stooping forwards, the arms extended, or clinging to the bedside. In this condition, the sound produced by each inspiration was much more loud than usual, the face becoming red in colour, and bordering

upon the violet; the pulse was hard, slow, and unequal. At nine in the evening, a large blister was applied on the fore part of the neck. Towards midnight, respiration became more easy, and the next morning he was found, as in the preceding days, lying on his right side, breathing without much difficulty, but always with the same hissing sound accompanying each inspiration.

Towards evening, a new paroxysm of orthopnœa occurred much more violent than the last, and which had not abated as yet on the next morning's visit. The violet colour of the face, the extreme smallness of the pulse, announcing death to be at hand, three grains of emetic were administered, and a new blister applied, after leaving the part irritated with ammonia.

The patient did not vomit, had some small stools, and expired an hour after taking the emetic.

Autopsical examination twenty hours after death.—The larynx was found to be in its natural condition, to the great astonishment of those who had seen the patient. In the hinder part of the mouth, and in the pharynx all was healthy.

The lower portion of the trachea was compressed and flattened from before, backwards, by an aneurismal tumour, a little thicker than the fist of a man, and of a rounded form. This tumour was formed by the aorta, considerably dilated from about an inch above its origin, to where it is buried between the two pleuræ. The bulging of this artery was chiefly on the posterior side, and at the expense of its posterior coat, so that the tumour, although voluminous, did not touch the sternum nor the ribs, but it bore on the vertebral column, compressing the teachea, to which it intimately adhered by a portion of its surface as large as a sous. The cavity of the sac included a good deal of blood partly coagulated; its sides were strengthened by a layer of fibrin, about an inch thick in some places, but very thin, and almost entirely worn away towards the centre of the posterior side, where it had adhered to the trachea. In this place, all the coats of the arte-

ry were destroyed, the surface of the trachea corroded, and several cartilaginous rings denuded, and as it were dissected, and projecting into the aneurismal sac. Thus the mucous membrane was the only barrier to the irruption of the blood into the trachea, and this would have been soon removed, if the death of the patient had not prevented it, because the mucous membrane already presented a circumscribed spot of a livid red, which appeared to be the commencement of an eschar.

The remaining surface of the sac was free, and offered the same appearance as a healthy aorta. The internal membrane seemed wholly untouched. I observed, however, a slight ossification about the size of the nail of the small finger, at the place where the sac was contracted abruptly to form the continuation of the aorta. There were five or six nearly similar ossifications, dispersed here and there in the internal part of the thoracic and abdominal aorta. This artery had, in all its extent, a more strong calibre than is natural.

The arteria innominata, the sub-clavian, and left carotid rose from the very centre of the aneurismal sac. The trunk of the first had almost entirely disappeared, so that on first examining it, the right carotid and sub-clavian seemed to rise isolated, and more than an inch's distance from each other. The last, (right carotid) traversed in an oblique direction, and for about an inch, the thick walls of the sac, in nearly the same manner as the ureter traverses the membranes of the bladder. By this accidental disposition the passage of the blood through the right sub-clavian must have been intercepted, whilst the sac was distended with blood.* No other alteration was perceptible in this artery.

All the other arteries, and the heart itself, were natural.

The lungs were soft, and little elastic, but otherwise healthy. The left bronchia, which was principally compressed by the sac, was gorged with a thick, ropy, and somewhat frothy mucus. The right bronchia was round: so were all the other organs of the body, &c.

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* This accounts for the absence of pulsation in the arm of that side.

ART. II. *On* PARTIAL PARALYSIS *of the Face.* By EDWARD DELAFIELD, M. D. Read before the New-York Physico-Medical Society, July 1st, 1823.

THE study of anatomy presents to its zealous prosecutor such an endless variety of subjects to engage his attention, that it is not surprising, after so many centuries have elapsed, during which the human body has been minutely and carefully examined, that frequent discoveries are made in this most interesting branch of science. Much as has been added to our stock of knowledge within a few years, with regard to the structure of the human body, still more has been done in ascertaining the *functions* of parts, whose use had been heretofore imperfectly understood. Among other subjects, anatomists have, recently, in different parts of Europe, made great advances in the minute dissection and display of the nerves; but whilst the old doctrines prevailed, "the discovery of new branches of nerves, and new ganglia, only involved the subject in deeper obscurity." To Mr. Charles Bell we owe it, "that the nervous system, hitherto the most unsatisfactory part of the physiologist's studies, has assumed a new character. The intricacies of that system have been unravelled, and the peculiar structure and function of the individual nerves ascertained: so that the absolute confusion in which this department was involved, has disappeared, and the natural and simple order has been discovered."

The attention of the author of this paper was drawn to this subject by meeting with several cases of partial paralysis of the face, a disease which he had imperfectly comprehended before he became acquainted with Mr. Bell's new doctrine of the nervous system. To make the subject better understood, it will be necessary to make a brief abstract of this doctrine.

Mr. Bell divides the nerves of all animals into two parts or systems, the one simple and uniform, the other irregular and complex, in proportion to the complexity of organization. In

distinguishing them, the guiding principle is obtained by ascertaining what parts of the structure of the animal are necessary to life and motion; and what organs are superadded, as the animal advances in the scale of existence, as necessary to higher and more complex enjoyments and actions. Where an animal is endowed with mere sensation and locomotion; where there is no central organ of circulation, and no organ of respiration, but what is generally diffused over the frame, the nerves are extremely simple. They consist of two cords running in the length of the body, with branches going off laterally to the several divisions of the frame. In the human body, we find the same *symmetrical* system of nerves as in these lower animals, although obscured by a variety of *superadded* nerves. These additional nerves belong to organs, which, tracing the orders of animals upward, are observed gradually to accumulate until we arrive at the complication of the human frame. In examining, more particularly, we find that no organ which possesses only one property, or endowment, has more than one nerve, however exquisite the sense or action may be; but if two nerves, coming from different sources, are directed to one part, this is the sign of a double function performed by it. If many distinct nerves go to it, it possesses many distinct powers, or enters into different combinations, in proportion to the number of its nerves. The function which in the human body, serves most materially to complicate the nervous system, is that of respiration; comprehending under it all the nerves which serve to combine the muscles employed in the act of breathing or speaking. All these nerves, Mr. Bell ranks in the class of *superadded* nerves, and distinguishes them by the name of "respiratory nerves." When we recollect how much the respiratory action is extended and increased in a man excited by exercise or passion; when we see instead of the gentle and scarcely perceptible motion of the chest, as in common breathing, the muscles of the throat and neck violently drawn, and the lips and nostrils move in time with the general action; when we observe that some hundred muscles are thus employed in the

act of breathing, or in the common actions of coughing, sneezing, speaking, and singing; and that they cannot be associated without cords of connexion or affinity, which combine them in the performance of these actions; we form some idea of the vast complexity which the function of respiration adds to the nervous system; and yet discover that all these nerves are unconnected with, and independent of another complete system which supplies these very muscles with nerves which order their voluntary motions, and give them sensibility.

This doctrine has been made practically useful by Mr. Shaw, who assisted Mr. Bell in his experiments on the subject. He has shown "that when one system of nerves is affected, the symptoms are different from those following a disease of the other, and that the two systems are seldom affected at the same time," and, "that in common cases of hemiplegia or palsy after apoplexy, the muscles are paralysed only in those voluntary actions, the perfection of which depends on the nerves of the original or *symmetrical* class; while in the case of partial paralysis of the face, in consequence of an affection of a nerve of the *superadded* system, the muscles are deprived only of the power over those actions which are to a certain degree involuntary, or to perform which, it is necessary there should be a combination with the organs of respiration;—and hence it necessarily follows, "that the two kinds of paralysis seldom or never depend on the same cause, and that, consequently the plans of treatment must be widely different in each case.

The cases to which I have alluded, and which drew my attention to this subject, were instances of paralysis of all the muscles on one side of the face, supplied by the portio dura of the seventh pair. Mr. Bell's experiments upon animals have proved how exactly the symptoms arising from a division of the trunk of this nerve, correspond with those which appear in the disease in question. All the muscles which it supplies, are in some way connected with respiration, and serve also to express the various emotions of the mind, so re-

markable in the human countenance, although not entirely peculiar to it. In the first of Mr. Bell's experiments, the nostrils of the animal being confined for a few minutes, so as to make it pant and forcibly dilate the nostrils at each inspiration, the portio dura was divided on one side of the head: the motion of the nostril on the same side instantly ceased, while the other nostril continued to expand and contract in unison with the motions of the chest: the animal being untied and food given to him, he ate without the slightest impediment. In another animal, the superior maxillary branch of the fifth pair was divided: no change took place in the motion of the nostril; the cartilages continued to expand regularly in time with the other parts, which combine in the act of respiration; but the side of the lip was observed to hang low, and it was dragged to the other side. The same branch of the fifth pair was divided on the opposite side, and the animal let loose. He could no longer pick up his corn, the power of elevating and projecting the lip, as in gathering food, was lost.

From these and other experiments, Mr. Bell concluded, that the portio dura of the seventh, is the respiratory nerve of the face; that the motions of the lips, the nostrils, and the velum palati, are governed by its influence, when the muscles of these parts are in associated action with the other organs of respiration. The action of sneezing and coughing, is entirely confined to the influence of the respiratory nerves. When carbonate of ammonia was put to the nostrils of the ass, whose respiratory nerve had been cut, the side of the nose and face where the nerves were entire, was curled up with the peculiar expression of sneezing; but on the other side, where the nerve was divided, the face remained quite relaxed, although the branches of the fifth pair and the sympathetic were entire.

My object in this paper is to prove the truth of Mr. Shaw's deduction from these facts, viz. that the muscles supplied by the superadded nerves, may be paralyzed by a disease of those nerves, independently of any affection of the brain itself, or

of those parts supplied by the class of original or symmetrical nerves: and that treatment directed to the removal of the disease of the affected nerves, will remove the paralysis. Mr. Shaw's cases were all of such long standing, that he had no opportunity of testing the result of a mode of treatment on these principles. I have been so fortunate as to meet with several cases so recent, as readily to yield under this treatment.

CASE I.

N. Van Dine, captain of an American merchant vessel, in consequence of exposure to cold during the night, was attacked with rheumatism, affecting the neck, shoulder, and hip of the left side. This disease continued with unabated violence during twenty days, when he was seized with violent pain in the left ear, and behind the angle of the jaw. The next day he found the left side of the face paralyzed. He was at this period at sea, on his voyage home, and it was six weeks after the appearence of the disease, before I saw him, which was in December 1822. The face was then nearly in the condition in which it was first attacked. On a first view of it, nothing remarkable was perceived, except that the right angle of the mouth was slightly drawn to one side. The moment, however, that he spoke, the whole face was horribly contorted, and when he smiled or laughed, this took place in a still more extraordinary manner. In either of these actions, the left side of the face remained entirely passive, while the muscles of the right were in full action. In consequence, the angle of the mouth was drawn very much to one side. Not only the muscles of the left side of the mouth and nose were paralyzed, but those also of the eyelids and forehead. Consequently, the patient could not close the left eye, and it had become inflamed, and its sight much impaired. When the muscles on the right side of the forehead were in action, and the brow was wrinkled, the skin on the left side was perfectly smooth. He complained also of some difficulty in moving the tongue, and when it was thrust out of the mouth, it was drawn to the right side; this caused some difficulty in speaking, and his

voice was thick and indistinct. All these paralyzed parts it will be recollected, are supplied by branches of the portio dura, while on the other hand, the muscles in the face supplied by the fifth pair, retained their powers unimpaired. He could close his jaws with equal force on both sides; the action of the buccinator and orbicularis oris continued perfect; and the sensibility of the skin of the paralyzed cheek was not at all diminished.

In this case, it was evident that the paralysis arose from a transference of rheumatic inflammation to the portio dura of the seventh pair. Under this impression, the patient was ordered to be cupped over the origin of this nerve, and immediately afterwards, a blister drawn in the same situation. The cupping was directed to be repeated as soon as the blister healed, and the blister reapplied. The prescriptions were but carelessly attended to; the cupping and blistering were performed but twice, and that at the interval of some weeks. Considerable improvement in the appearance of the face, notwithstanding, took place; but the patient again embarking on a voyage, I never ascertained the result of the case.* The effect of the treatment in this case, although unsatisfactory, was sufficiently successful to encourage me to repeat it in the next, which soon afterwards occurred.

CASE II.

Miss Adeline B——, aged 17 years, applied to me on the 5th of March, 1823. A fortnight before I saw her, she had begun to feel a severe pain behind the angle of the jaw, and below the ear, on the left side of the face, which continued gradually increasing for a week. At this time she was exposed to a severe snow storm, and immediately on arriving home, felt her mouth drawn to one side. In a few hours the left side of the face was completely paralyzed; she had all the symptoms which I have detailed in the previous case, and

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* I have since learned that this patient entirely recovered a short time afterwards.

these had gradually increased until I saw her. She was immediately cupped, a blister drawn over the origin of the portio dura, a cathartic of calomel and jalap ordered to be taken immediately, a pill of one grain of calomel directed to be taken every night, and ½oz. of sulph. magnes. every morning.

On the 12th I saw her again, and there was a great improvement in all the symptoms; the mouth was but slightly drawn in smiling or speaking, and she could almost close the left eye. The cupping and blistering were repeated, and the other treatment continued. On the 24th she was perfectly cured. This patient was affected with the same disease, when six years of age, but in a slighter degree. It continued between two and three months, and then gradually subsided, until it was perfectly cured.

CASE III.

Theresa Waters applied at the Eye Infirmary in the month of April 1823. She had been the subject of partial paralysis of the jaw in December last. On the 10th of December, 1822, in consequence of unusual exposure to cold in washing clothes, she was suddenly seized with acute pain below the left ear. This continued two days, when she discovered that the left side of her face was paralyzed, the mouth drawn to one side, the eye incapable of being closed, and watering profusely, with the other symptoms of this disease. She was not prescribed for by any physician, but first applied a poultice to the seat of the pain, which gave her some relief. After three weeks had elapsed, she began to apply blisters to the same situation, which were repeated three times. Under this treatment she slowly improved, and when I saw her, very little remains of the disease could be discovered.

CASE IV.

On the 10th May last, I was requested to see Mrs. Mary Ann Ray. Three weeks before I saw her, she was attacked with violent pain in the head and neck, accompanied with severe inflammatory fever. She was bled, and took a purgative, which relieved the febrile symptoms, but the pain in the head continued, varying in violence, with little abatement, for a

fortnight. At this time it became fixed in the right ear, and behind the angle of the jaw; it subsided, however, in a few days; and suddenly all the symptoms of partial paralysis of the right side of the face appeared; and in this case to a greater degree than I had yet seen them. The mouth and tongue were so much affected, that she could articulate very indistinctly, and certain words she could not pronounce at all. The eye was widely open, slightly inflamed, and watering profusely, and by the strongest effort it was not possible to close it. In this situation she had been about a week, gradually growing worse. I ordered six leeches to be placed over the trunk of the portio dura, and a blister to be afterwards applied. She was also directed to take gr. ij. of calomel every other night, and ℥ss. of sulph. magnes. on the following morning. In a few hours after the application of the leeches, she was much better; the eye could be half closed, and the mouth was less drawn aside in speaking or smiling. On the 25th, the leeching and blistering were repeated. The improvement was now rapid; and on the 2d June, fifteen days after I first saw the patient, no vestige of the disease could be discovered.

CASE V.

DEAR SIR,

The case of paralysis of the face, which lately fell under my observation, occurred to an unmarried female, about 30 years old. She was attacked, a week before my first visit, with violent pain, as she then said, in the left ear, which, in a short time extended over the whole of that side of the face and head. There was slight redness beneath the ear, which gradually spread upon the cheek. Fomentations with brandy and laudanum were applied to the ear and face, and vol. liniment to the back of the neck. The redness of the part had now disappeared, and the pain in some measure abated, so that the patient had resumed her ordinary employment of sewing. There was nothing unnatural in the appearance of the face when she was composed and silent, excepting a comparative smoothness of the side affected, which, without examination, might easily have been ascribed to diffused swelling;

but when she spoke or laughed, it was discovered, by a most ludicrous expression of countenance, that the muscles and integuments of the part affected were immoveably fixed. The eye of that side had not been closed in some days, while the muscles employed in mastication retained their function.

Although I was at that time unacquainted with the precise nature of the disease, as explained in the valuable paper of Mr. Shaw, its origin and progress were readily recognised to be those of an affection of the portio dura. The patient was actively purged for a number of days in succession without any apparent benefit. She was then cupped, and blistered behind the ear. The blistering was repeated behind and before the ear alternately for some weeks. The muscles were gradually restored to action, so that in about four weeks from the attack, the eye could be opened and shut at will, and the expression of the countenance became natural.

Yours respectfully,

A. W. IVES.

June 30th, 1823. Park-Place, No. 3.

It is unnecessary to make any remarks upon the treatment of this disease. That pursued in the cases just detailed is sufficiently obvious, and precisely what is pointed out by the general principles of medicine in the treatment of local inflammation, wherever subsisting. It is sufficient to have established the nature and cause of the disease. The method of treatment flows so directly from these, as to require no farther elucidation.

ART. III. OBSERVATIONS *and Experiments on the Medicinal and Poisonous properties of the* MANCINELLA TREE. By J. B. RICORD MADIANNA, M. D. Read before the Lyceum of Natural History of New-York, April 1824.

[Continued from p. 319.]

Of the mancinella root.

I chewed a piece of this root, and having kept it ten minutes in my mouth, found it entirely tasteless; my saliva was slightly tinged with a yellow colour. At the time I had no sensation of any thing, either on the tongue or the palate; but half an hour after, I felt a smarting heat on my tongue, mouth, and throat. In two hours the smarting and burning were very severe; I salivated considerably, and was obliged to keep cold water in my mouth, the pain becoming insupportable. These symptoms were much diminished in five hours, and the next day all disappeared.

Cold infusion of the root.

I left two ounces of these roots to infuse in eight ounces of water during six days.

First Experiment.

Two table-spoonsful of this infusion given to a small dog produced no effect; nor did eight given to another dog of the same size.

*Decoction of the root.**

This decoction is the colour of bistre; I held my hand in it ten minutes still warm, without experiencing any ill effect. I tasted it and found in it some sharpness and astringency.

Experiments.

At 9 o'clock in the morning, I gave two table-spoonsful of

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* This decoction was made with six ounces of the root, and two pounds of water reduced to one pound.

this decoction to a small dog; five minutes after his abdomen was much agitated, he voided some blood and urine very copiously; appeared to have much nausea, but without vomiting. At half past nine he voided mucus by stool; he coughed much, and continued from ten to eleven o'clock voiding blood and mucus; he was unable to stand, and refused all nourishment. From one till five he was less agitated, and appeared to suffer less; at eight he urined copiously, the parotid gland was much swelled; he ate and walked pretty well. The next day he was somewhat weak, but was perfectly cured in a few days. I repeated this experiment several times, and always with the same result, having given as much as eight table-spoonsful of a still stronger decoction to a small dog, from which death did not ensue. It appears that the mancinella root is much less venenous than the milk, the leaves, or the fruit, and that the *gastro-enteritis* produced by it, is rarely ever sufficient to effect the disorganization of the tisses.

Of the leaf.

Leaves exteriorly applied. Having gathered these leaves from the tree, I bruised and rubbed them in my hands without any result. I pounded a number, and with a few drops of water made a cataplasm, which I applied to the back of my hand, where I left it two hours without effect. Was it not the emanation arising from the tree, which produces the eruption already spoken of, and could the rain falling from the leaves produce this eruption? The leaves themselves, freshly gathered and applied to the skin as in the above experiment, would surely have the same effect. I have also held my hand during five minutes in a warm decoction of these leaves, without suffering from it. If, however, they should, through inadvertence be applied to the anus, as has happened to several persons, having a certain call on the seashore, they cause violent inflammation and extreme pain. Though the juice of the mancinella leaf produces no eruption when applied to the skin, it nevertheless causes much inflam-

mation, when put in contact with the mucus membranes, and is a more dangerous poison than any other part of the tree.

Juice of the leaves applied beneath the epiderm.

I bruised a certain quantity of fresh leaves, and squeezed the juice into a wound made with a scalpel, in the thigh of a large dog; he did not appear to suffer from this application; the day after the wound was in suppuration, and in six days the cicatrix was formed.

The juice of these leaves put in the eye of a dog produced so violent an inflammation, as to make it probable that the animal would have lost the sight of it, but in the space of eight days, it was perfectly cured without using any remedy: not even the least opacity remained in the cornea.

Leaves taken internally.

First experiment. Cold infusion. I infused thirty-six mancinella leaves in a glass of water, for the space of fifteen hours, and taking some in my mouth, I found it tasteless. I gave more than the half to a small dog, which was not in the least incommoded; he ate as usual; I swallowed a part of what remained without any ill effect.

Second experiment.

Vapour arising from the decoction. While boiling an ounce of the leaves in ten ounces of water, I uncovered the vessel containing the decoction, and inhaled the steam arising from it. Immediately after, I experienced a sensation of burning heat in my mouth; the mucus membrane which covers the mouth was filled with very small pimples, and the smarting was so extreme, that I was obliged to hold cold water in my mouth, and renew it very frequently. Two hours after the pain became supportable, and in the course of the day was felt no more. I coughed a little during the day. The pain occasioned by this vapour was more violent than that caused by the root of the mancinella.

Third experiment. At 3 o'clock P. M., I gave three large table-spoonsful of a strong decoction of these leaves to a dog, which in a few minutes created nausea, and occasioned a considerable salivation, vomiting, evacuation of urine, swelling of the parotid gland, but death did not ensue.

Expressed juice of the leaves introduced into the stomach.

I gave one tea-spoonful of this juice to a small dog, which not affecting him in two hours, I gave him three more tea-spoonsful. Shortly after he refused meat, though apparently not in a state of suffering. An hour after he foamed much at the mouth, and seemed very sick. Three hours after he had several watery stools, and died without convulsions, or much apparent pain.

Dissection.

The head: arachnoid membrane slightly inflamed, with water at the basis of the cranium.

The lungs very much inflamed, and covered with livid spots.

The pericardium contained a greater quantity of water than common.

The auricles full of coagulated blood.

The two ventricles distended also with coagulated blood.

Liver: the whole exterior surface inflamed and livid, the interior natural. The gall-bladder distended with bile of a dark green colour.

The stomach distended and containing a good deal of mucus and a lumbric worm, but little inflamed; the intestines were not inflamed. This corresponds with the symptoms produced by the poison, for the animal had no vomiting nor bloody evacuations, and seemed not to suffer in the digestive organs. May it not be by the re-action on the nervous system in this case, that death has been accelerated, which the pneumonia and gastritis would not have produced in

so short a space; this I have explained in the modus operandi of the assiflora quadrangulari root.

Forty grains of the leaves dried and pulverised had a violent effect on a large dog, but he recovered in two days.

I gave a drachm and a half of these leaves pulverised to another dog, still stronger than the preceding, which caused him to vomit, to urine a great deal, and salivate abundantly, but no alvine evacuation. In the space of six hours, however, all these symptoms disappeared. I firmly believe, that if, according to the method of Dr. Orfila, the œsophagus of these two dogs had been tied, they would have experienced other symptoms, and death would perhaps have ensued. But in that case, I should not have been able to observe the great difference there is between the action of these leaves employed fresh or dry; for in drying they lose their acridity, and the greatest part of the venenous principle which renders them still more mortal than the apple.

Of the resinous gum.

This gum is not very abundant, it is only found on the largest trees, in knots and old cracks. Large pieces of a grayish colour, opaque and full of cavities, often containing drops of limpid water are sometimes found. It is hard, brittle, light, and adhering very closely to the bark of the tree. It is inodorous, and when applied to the tongue tasteless, and leaves no sensation. Of its chemical properties, I shall speak in my Toxicology.

First Experiment.

I triturated forty-two grains of this gum in six spoonsful of water, and gave a spoonful to a large dog; the salivation it excited was so abundant that it was with much difficulty I could succeed, which at last I did in administering half of the dose. The salivation augmented considerably; his mouth, tongue and throat, however, were not inflamed, and the animal did not appear to suffer pain; three hours after his kidneys and

bladder seemed much stimulated, and he voided urine frequently. He had no other evacuation, and ate as usual.

Second Experiment.

I gave to a smaller dog than the former, 15 grains of this resinous gum, the animal experienced the same symptoms as the preceding, and in the space of three quarters of an hour, urined seven or eight times.

Third Experiment.

Being convinced from these experiments and many others, that this gum possessed no deleterious properties, but seemed a very powerful diuretic, I ventured to take four grains myself. In a few minutes I found my mouth filled with water, but felt neither heat nor smarting. During the three hours that followed, I experienced considerable excitement in the bladder, and urined copiously. No other effect was produced.

Of the milky juice.

The smallest incision made in the bark of the mancinella tree, gives free passage to an abundance of this juice. It drops also from the petiole of leaves when separated from the branch; likewise from the fruit: the large roots contain much less than the trunk. Its colour when running from the tree is a beautiful white, and it is then also liquid in consistence, but soon after thickens, becomes gluish, and changes to a gray colour. Its odour is similar to that of fresh peach leaves, and even still more agreeable, but after twenty-four hours is entirely evaporated. It is, however, remarkable that the blossom has no smell.

We are told by Dutertre, that the Indians made use of the milky juice of the mancinella, to poison their arrows. "For this purpose," Father Labat also says, "they make an incision in the bark of the tree, and there place the ends of their arrows, which they imbibe with the liquor as it runs out. The arrows thus imbibed are dried, and when used, wound

and poison at the same time. I could not easily believe that the arrows dipped in the mancinella milk alone, were capable of poisoning the wounds made by them. Some other substance must doubtless have been applied to these arrows to render them venenous. The milk of the mancinella is in my opinion poisonous, only when applied in a large quantity to the mucous membrane, and has not a great effect on the divided muscles, or on the skin when the epiderm is broken. For as I have already hinted, the venenous vapour of this tree is a principle different from all its other parts.

Experiment. Milky juice applied to the epiderm.

I applied to my arm a pretty large quantity of the mancinella milk, from which resulted neither sensation, nor inflammation, nor eruption.* I repeated this experiment upon myself several times, and once having neglected to wipe off the milk thus applied to my hand, though finding no inconvenience all that day, the next I felt a great itching in that part, and perceived a few small red pimples, which occasioned an extreme itching and prickling; they disappeared after a few days without suppuration.

Experiment. Milky juice applied under the epiderm.

Having shaved the hair from the thigh of a dog, I made a deep incision of two inches long; this wound I filled with the milk taken immediately from the mancinella tree. Thirty minutes after this application, the animal appeared to suffer horribly; in three hours time the wound seemed not much inflamed; he took his food with avidity. The following day the suppuration had taken place, and in eight days the granulation was formed, and in a few days cicatrized, without any application, it being left entirely to nature.

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* The milky juice contained in the bark of the hippomane mancinella upon touching the skin, immediately raises watery vesicles. (Bancroft's History of Guiana.) This is not true, and the author does not speak from experience.

From this experiment, which I repeated on cats and other animals, is it credible that the Nhandiroba (feuillea cordifolia) used by Mr. Drapier, contributed to destroy the venom found in an arrow with which he pierced two cats? "We," says he, "slightly pierced two cats with the point of an arrow poisoned with the juice of a mancinella. We applied to the wound of one of these animals a cataplasm made with the seeds of nhandiroba. The animal appeared to suffer only from the wound which soon cicatrized; the other cat was left to the action of the poison, and soon fell into convulsions, which ended in death."* Mr. Drapier may be assured, that the arrow was poisoned with some other substance, and not with the mancinella, for he does not mention where he obtained this arrow.

Experiment. Milky juice applied to the eye.

Conducting with me a stout dog to the sea-shore, I gathered some of the milk from the mancinella, and dropped a teaspoonful in his eye. The pain was sudden and violent; the eye became red and watery; the animal howled and rubbed himself on the grass and branches of trees, as if unable to bear his pain. The eye swelled, and I found it impossible to open the eyelid, in order to examine the cornea. The next day the swelling still continued, and wishing to leave nature to its own action, I made no application. Towards evening, I could discern a part of the cornea, which was red, but in which neither iris nor prunello was discernible. On the fourth day after the application the eye began to clear, and a few days more were sufficient to heal it perfectly. What a great cure would the nhandiroba have made, if applied in cataplasm to this eye! Nature, however, acted alone on this occasion. How many maladies are retarded in their cure by useless or contrary remedies, to which, however, surprising virtues are attributed!

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* Journal Universal des Sciences Medicales. Paris, Fevrier, 1820.

Experiment. Milky juice applied to the tongue.

Being on the sea-shore for my experiments on the mancinella, I applied to the tongue of my negro boy Jacob, three drops of the milky juice. Five minutes after, he pretended to feel a burning like pepper in his mouth; nothing, however, appeared on his tongue, and after some time he ceased complaining. Not being satisfied with this experiment, for knowing the boy's propensity to lying, I put no confidence in what he said, and to satisfy myself of the truth, I the next morning applied the same quantity of this milk to my own tongue; a few moments after, I felt a very slight pricking, and adding three more drops to the same place, the pricking extended itself to my throat; however, in a few hours I felt nothing more; doubtless, because the quantity of milk was very small, for recollecting the consequences of the apple I chewed, I had no inclination to pursue the experiment further. The chemical analysis of the juice of the manchineel apple, gives a substance, which when applied to the mucous membrane, acts with more energy than the milk, or any of its component parts; but all this chemical labour will be minutely presented in my future work.

Milky juice introduced into the stomach.

First experiment. Ten grains of this milk given to a small dog, produced the most violent symptoms, of which I suppress the details. He, however, recovered in a few days without any remedy. This experiment supports the assertion of the celebrated Dr. Broussais, who says, "a phlegmasia will disappear spontaneously at the end of a certain time, independent of any topical means."

Second experiment. I gave to a small dog a tea-spoonful of the mancinella milk recently extracted from the tree. The symptoms produced by this dose were of the extremest violence; bloody evacuations, and excessive weakness continued during the whole course of this gastro enteritis, and the animal showed every symptom generally observed in those fevers called icterodes, putrid, or malignant.

Dissection.

The arachnoid membrane much inflamed.

Lungs: the right lobes natural; the left inflamed in its posterior and inferior parts.

The heart: the right auricle much distended, and full of black clots of blood; the left empty. The right ventricle full of black and clotted blood; the left empty. (I will here remark, that the great number of experiments made by me, have always presented this appearance of the heart in those cases of poisoning, in which death has been produced by a phlegmasia of some little standing; on the contrary, when death has come on rapidly, in consequence of the action of the nervous system on the circulation, both the auricles and the ventricles have always been distended with blood.)

The liver natural; the gall-bladder full of yellow bile.

The stomach much contracted, containing bloody water, and a substance like coffee grounds.

The mucous membrane inflamed, and loosening easily.

The intestines distended with air, and filled with bloody water, considerably inflamed throughout. Kidneys natural. Bladder empty and contracted.

Very small doses of this milk repeated several times in a day, do not kill a fowl; but a tea-spoonful given at once is sufficient for this effect.

Experiment.

I kept in a glass vase a fish called by the negroes Jamais mourir, (Logocephalus. L'abbé Bonnaterre.) and which I had nourished several days. I took it an instant from the water, and introduced into its stomach a pill made of two grains of the mancinella milk. It swam about at first with its accustomed vivacity, but in a very few minutes appeared convulsed, and rejected the milk which was coagulated, and seemed like small filaments on the water. It then turned on its side, fell to the bottom of the vase, and appeared dead or dying. Upon changing it, however, to another vase of fresh water, it regained its movements in a small degree, but was still much

convulsed. Several black spots were seen on its skin, which appeared and disappeared successively, and varying in their shapes and intensity of colour. This fact struck me as very curious, and worthy the attention of the philosophic observer. The fish died shortly after this phenomenon.

It is seen from this experiment, that the milky juice of the mancinella is as active a poison for fish, as for other animals: how then can it be supposed that the venenous qualities of the Scomber carangus, Muræna conger, Syphyræna becuna, and many others, are to be attributed to the feeding of these fish on the mancinella apple? In the Toxicology which I have already announced, I shall treat largely of the deleterious qualities of fish, drawn from the observations and experience of seven years residence in those climates.

Treatment of the mancinella poison.

The great antidote to this poison has, until the present time, been supposed to be sea-water; and the echoes which repeat what has been so many times said, still trumpet forth its good effects.

Mr. Descourtilz,* in his medical flora of the Antilles says, "The curcuma tuberose root, (alloia radicibus stoloniferis. Tussar.) is still much vaunted for its good properties in combating the deleterious influences of the mancinella; but this learned author very properly adds that: "The incipidity of this juice forbids attributing to it any neutralizing quality, which is more certainly found in sea-water, the efficacy of which, in this case, cannot be contested." This assertion I contradict, and I have experience on my side. All the animals treated by me with sea-water, have died more promptly than those left to nature; it considerably augments the inflation of the abdomen, and frequently prevents the vomiting, which takes place immediately after having swallowed the poison, and thus detains the offensive matter in the already inflamed stomach.

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* Flore medicale des Antilles, Tome premier, 7e. livraison.

"Sea-water," Dr. Chisholm* also says, "I have repeatedly seen remove the dangerous effects of this poison, and the Bignonia lucoxylon (the white cedar of the country) is said to be also a certain antidote." But the Doctor does not affirm that he has tried the effect of these antidotes on other animals.

It has been seen by the dissections I have made, that the disease produced by this poison, is a gastro-enteritis. I ask, whether sea-water is an antiphlogistic remedy, capable of combating this inflammation, or any other inflammation, and if it does not rather augment it, as being a stimulus applied to a membrane already much irritated? If Mr. Descourtilz or Dr. Chisholm had made a single experiment, they would have been convinced of the truth. If there exists any remedy which may bear the title of antidote to the baneful effects of the mancinella, it is the nhandiroba.

Experiment.

I pounded in a mortar three of the nhandiroba seeds, and poured upon it a pound of cold water, and strained this through a piece of canvas. Having made this preparation, I gave to a large sized dog, a large tea-spoonful of the milky juice of the mancinella, and at the same time a table-spoonful of the nhandiroba thus prepared; a few minutes after he vomited a part of the milk. From half past 10 o'clock, which was the time I began the experiment, till half past eleven, he took a table-spoonful of the nhandiroba every five minutes, and vomited after every dose. After this he vomited no more. He voided blood and mucus, his abdomen was less swelled, and less agitated than in those experiments in which no nhandiroba was exhibited; the animal also appeared to suffer less than in those cases. From one o'clock until six, he has alternately had five doses of nhandiroba, and four injections of the same: during which time, he had but one bloody evacua

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* Chisholm's Essay on the malignant pestilential fever of the West India Islands. London. 1795. page 26.

tion; he became less agitated and breathed with freedom. After ceasing the administration of the remedy, he lay down in a basket apparently much fatigued, and refused all nourishment. During the night he voided a considerable quantity of black blood; the next morning he jumped from his basket with tolerable agility, and had another dose of nhandiroba. Some milk, and a little food were taken with appetite; he coughed somewhat, and his respiration appeared difficult. The left parotid gland was much swelled. This gland I have always found enlarged in animals poisoned by the mancinella. The third day his left thigh was paralyzed, and the day after that, the member was entirely covered with an eruption of large pustules, and a large ulcer formed, which healed in a short time, when the leg regained its motion. This dog was cured perfectly, and even grew fat in a little time, and it is reasonable to suppose that without the nhandiroba, he would have died. I have with the same success repeated this experiment several times. The nhandiroba has always been salutary, when the dose of mancinella has not been too large, or the animal very young; in these cases the nhandiroba has been found ineffectual. Two cases also, in which I gave the nhandiroba in substance, that is, without straining it, did not succeed.

Desiring to ascertain whether it was not a property common to almonds, to act against this poison as a cooling or antiphlogistic drink, I made an emulsion with sweet almonds, and choosing a dog of size and strength similar to the former, I gave him the same quantity of mancinella milk, and treated him with the emulsion in the same manner as the other had been treated with the nhandiroba. The animal enduring the most violent suffering, died in the space of four hours. I dissected him and found the lungs filled with black blood; the stomach inflamed as well as the intestines, and became covered with black spots. In fine, all the appearances indicated a most violent gastro-intestinal phlegmasia. "At Cayenne," says

Mr. Aublet,* "some imprudent persons used the milk which runs from incisions made in the trunk of the mancinella to destroy worms in children, a pernicions custom," adds he, which often endangered their lives." Instead of saying often endangered, Mr. Aublet should have said, *always*. For I much doubt that he has ever seen it administered, without seeing it prove fatal to the patient. But it may be presumed, that Mr. Aublet has been told so, and he believed it.

In my experiments on this milk, I have not found it possessed of any active anthelmintic properties, although the animals used in these experiments were often filled with worms, which in their dissection I have always found living in the intestines. The alcoholic extract, however, seemed to act especially against the tonic.

However, since the nhandiroba may be an antidote to this poison, the physician should not rely entirely on its virtues, but have an eye to the violent gastro-enteritis produced by the mancinella, and every means which his art furnishes. Such is my opinion on the treatment of this poison.

The negroes do not so frequently use the mancinella in their poisons, as the creoles imagine. The root so much dreaded, is, as has been seen, one of the least active parts of the tree, and the milk would doubtless be very difficult to administer without detection. I am much inclined to think this poison is not oftenest used by them. There being in those climates many other plants more at hand, and much more active in their effects than the mancinella.

Is it not a matter of high importance to the inhabitants of the West Indies, to be fully acquainted with the nature of those plants so often employed by the wretched slave to the injury of the master, and to the destruction of the innocent and unsuspicious? Is it not an advantage gained over any enemy, to be able to handle his own weapons, and thus frequently disarm him before the mortal blow is struck? To these questions, let the philanthropic friend of science answer.

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* Histoire des plantes de la Guiane Francaise, par F. Aublet, Tom. II. p. 885.

Art. IV. A Memoir *on the utility of tying* Large Arteries, *in preventing Inflammation in wounds of the principal joints, and important surgical operations, illustrated by cases.* By David L. Rogers, M. D. of New-York.

Ex principiis nascitur probabilitas; ex factis vero veritas.

The unfavourable termination of wounds in the large joints, and the little success attending the ordinary mode of treatment, has led surgeons in many cases to doubt the propriety of attempting to save the extremity: and in the majority of cases, amputation is subsequently resorted to in order to save the patient's life. A surgeon* of great eminence, whose opportunities have been sufficiently ample to lead to a correct conclusion upon this subject, entertains but slight hopes of preserving the limb, if we fail in uniting the wound by the first intention.

The synovia is allowed to escape, and inflammation ensues upon the internal surface of the joint. "If the patient be not very strong, it will be necessary to amputate the limb; but if his stamina be good, the patient may probably escape with anchylosis."

In offering this essay to the public, it is my intention to show, *first*, the inefficacy of the ordinary mode of treatment in wounds of the large joints; and, *secondly*, to invite the attention of surgeons to the propriety of cutting off the supply of blood to parts endangered by inflammation. This is a practice which has been frequently urged by Professor Mott from the surgical chair, and well illustrated by his recent operations on the lower jaw.

An ordinary case of simple incised wound in a joint, attracts but little attention from persons unacquainted with the serious nature of the accident. A cloth is bound about the part, and they attend to their usual occupation, unconscious of the terrible result. Many hours will frequently elapse before surgical advice is obtained. Inflammation commences in the joint, and

* Sir A. Cooper's Lectures, page 108.

the constant discharge of synovia, by lubricating the parts, renders union by the first intention very doubtful. A surgeon acquainted with the nature of the accident, would resort to the most active depletion both local and general. The disease gradually progresses, and after many months of confinement and pain, amputation is at last resorted to. This is the most frequent termination of wounds of the large joints. But they sometimes terminate differently. The end of the bones are denuded of their cartilages, a gelatinous substance is thrown out, which is gradually ossified, and firmly unites them, as in case of simple fracture. In confirmation of the above, I shall here add a few cases out of many that have come under my observation.

CASE I.

A. Hannah, aged 24 years, of steady habits and a good constitution, was received into the New-York Hospital, Nov. 12, 1822, for a wound of the knee-joint from a small penknife. The incision was about two lines in length; simple dressings were applied to the wound, and he walked to the hospital twenty-four hours after the accident. The knee was much inflamed, and painful; the dressings soaked with synovia, which continued to discharge in great quantities. His habit being full, he was bled largely from the arm, and ordered a brisk cathartic. The wound was carefully brought together by adhesive straps; leeches and cooling washes applied to the knee; and every exertion made to arrest the inflammation. But notwithstanding the active measures that were adopted, and continued from time to time as circumstances required, the disease continued to progress. The wound remained open. The termination of the disease in anchylosis failed; matter in large quantities was formed in the joint, burrowing itself both above and below the knee, from the spinous process of the ilium to the ankle joint; and after five months of great suffering, it was found necessary to amputate the limb.

CASE II.

Master C. aged 12 years, was thrown from a horse, and fell upon a pavement: the left arm was extended to break the fall,

which brought the weight of the body entirely upon the elbow joint, which gave way; the condyles of the os humeri were driven forward through the integuments, and lay perfectly naked on the fore-arm. He was immediately brought to my office for advice. The soft parts were badly lacerated, the bone denuded of its covering, lay four inches from its natural situation. The tendon of the biceps, and the brachial artery were pushed to one side, and lay posterior to the bone. After considerable difficulty, the bone was replaced in its proper situation, and the wound brought together by adhesive straps. From the great extent and dangerous nature of the wound, I was anxious that something more should be done, in order, if possible, to preserve the limb; and I accordingly recommended to his friends that the brachial artery should be secured by ligature. The necessary preparations were immediately made for performing the operation; but the anxiety of his friends had induced them in the meantime to request the attendance of their family physician, who unfortunately differed with me as to the necessity of the operation. The arm was accordingly dressed, and the boy sent home. Further advice was requested, and twenty-four hours after the accident two eminent surgeons were called in, who proposed immediate amputation; but the supervention of tetanic symptoms rendered the operation inadmissible. He was ordered large quantities of opium to lessen irritation, and emollient applications to the arm. These symptoms were relieved in a few days by a profuse suppuration from the wound, and after many weeks confinement he recovered with an anchylosed joint.

I would remark upon this case, that as the favourable termination of this wound could not have been anticipated, it would have been consonant with the best rules of surgery to have amputated the arm,* and no surgeon would have been censured for so doing; and in the second place, the proposed operation of securing the brachial artery was offered as the

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* Vide Hennen's Observations, page 159 and 274.

only chance of saving the arm, by cutting off the current of blood leading to the wound, it would have prevented a high degree of inflammation, and consequently lessened the subsequent irritation, at the same time allowing the soft parts an opportunity of uniting by adhesive inflammation. I am well persuaded, from subsequent experience, that it would in all probability have preserved the use of the joint.

The cartilages and ligaments in their healthy state, are said to be insensible, or at least their complaints are not conveyed to the sensorium; and consequently we are not aware of the contusions which they must daily receive in our ordinary occupations of life. But when diseased, or excited into action by local causes, they become exquisitely sensible. Possessing but slight powers of life, they resist disease badly, and are easily destroyed by inflammation, thus laying the foundation for the most obstinate and fatal maladies. In disease, as in health, they appear to be placed beyond the control of the system; and surgeons,* from the earliest days, have been conscious of the difficulty of controlling inflammation in the large joints by the usual treatment, and they generally resorted to immediate amputation. A surgeon,† a few years since, in a case of a wounded knee joint, to arrest hemorrhage and more effectually to check the progress of inflammation, secured the femoral artery in a ligature. The successful termination of this case established the principles as far as one operation can go to establish an important rule in practice.

I shall here cite a case of a similar nature, which lately came under my care, and to me has been truly interesting in its nature and termination.

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* Wiseman, in his Chirurgical Treatise on wounds of the joints, book vi. page 87, observes, "The greater wounds are attended with much more vehement pain, inflammation, *delirium*, convulsions, gangrene, and are commonly deadly." The Art of Surgery, by Daniel Turner, M. D. Sec. V. page 500, in treating of wounds of the joints, says, "Passing by the stiff and useless limbs, loss of the same sometimes occurs, and frequently of life also."—See John Bell's Surgery, Part III.

† American Medical and Philosophical Register, Vol. IV. page 176.

CASE III.

I was requested on the 4th of August, 1824, to visit Mr. M'Cay, aged 30 years, a wheelright, who had the day previously wounded his knee with a gouge. I found him lying on a mattress, drinking spirits, and enjoying the company of his friends. He was a man of full habit, with a constitution much injured by high living, and consequently a bad subject for a serious injury. So slight did he consider the wound, that he had neglected to ask advice, and had drawn it together by three sutures. The wound was situated on the side of the joint, about one inch in length, and allowing a free discharge of synovial fluid. The knee was much swelled, and painful, the inflammation extending above and below the joint to a considerable distance, with furred tongue, a full and hard pulse, and a loss of appetite, with great thirst. The stitches, which included the divided portions of the capsular ligament on each side, and added greatly to the original cause of irritation, were immediately removed. I apprised him of his dangerous situation, and solicited further advice. Dr. Mott was accordingly requested to visit him, and after maturely considering the circumstances of the case, and the slight chance that could be offered him of saving the leg by the usual mode of depletion, it was determined to cut off the supply of blood, by securing the femoral artery in a ligature. He was accordingly laid upon a table, and with the assistance of Dr. Mott, I passed two ligatures around the artery at the upper part of the middle third of the thigh, and the leg was dressed in the usual way. The edges of the wound on the knee were brought together, and retained by adhesive straps. The patient ordered to bed, with a strict injunction not to move the leg.

2d day. On visiting him this morning, I found all the dressings removed; he had passed a very restless night. His countenance flushed, and the pulse full and hard. The swelling of the knee has much subsided, and the pain by far less than it was prior to the operation. The wound was

again dressed, a saline cathartic was ordered, and the strictest abstinence enjoined.

3rd day. The cathartic had operated well, he rested much better during the night, and had no pain since the preceding day; from this time no symptoms of importance occurred during his recovery.

In a few days the pain and tumefaction entirely subsided, without any further discharge of synovia. On the tenth day after the operation, the dressings were removed from the knee. The wound had nearly closed, and granulations had sprung up from the bottom; the edges were again brought in contact by plasters, and left until the fifteenth day, when upon removing them, I was much gratified at finding the wound completely closed; on this day the ligatures came from the femoral artery, and the wound was nearly healed; on the twenty-fifth day he walked out without experiencing any inconvenience from the injury, except a weakness of the limb.*

How far the practice of tying the femoral artery in compound fractures, and dislocations of the ankle joint would be advisable in preference to immediate amputation, I have not had sufficient opportunity of judging. But as a powerful agent in lessening inflammation in these cases, I am thus far well convinced of its utility, and should strongly recommend its adoption in those cases where an effort should be made to save the limb. From the frequency of tetanic symptoms in these injuries, I am doubtful as to the propriety of hazarding the patient's life to save the leg. Unless the accident should occur to a young subject, with an unimpaired constitution, and enjoying the benefits of a good country air: the attempt ought, then, assuredly to be made. This distinction in the

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* Case third is the strongest proof that I am acquainted with in support of the utility of cutting off the circulation to large joints when seriously injured, and the favourable termination of this case may be attributed entirely to the interruption offered to the current of blood to the part; as it was unassisted by the Valsalvian depletion, as recommended by Larrey, Guthrie, and Hennen.

result of wounds in the country and city, ought strictly to be observed, as it is a well-known fact among surgeons of experience, that compound fractures and dislocations of the ankle joint do well in the country, whereas in the city, they, as a general rule, prove fatal.* Therefore, under other circumstances than those alluded to, it would be criminal to allow our humanity to govern us so far, as to endanger the life of the patient by an unnecessary delay in amputating the extremity. "However desirable it may be to save a hand or foot, yet in severe laceration, the frequency of tetanic affections should at once lead us to adopt immediate amputation."†

When an attempt is made to save the limb by cutting off the circulation, it will lessen inflammation, and aid the healing process. It will, however, have no influence upon the nervous irritation, or the accession of tetanic symptoms, which do not appear to be governed by the increase or diminution of the arterial excitement. When the inflammatory action has subsided, and the wound is kindly healing, in short, when we consider our patient free from danger; our best hopes are frequently destroyed by the accession of tetanic symptoms, which in a short time end his existence.‡ The following case was one of this kind, for the particulars of which I am indebted to Dr. F. G. King, house-surgeon of the New-York Hospital.

CASE IV.

"Vosburg, aged 34, labourer, habit full, free drinker, whilst engaged in removing earth from the hills at the Hook, a part of the bank caved in and struck him on the left leg just above

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* The late Dr. R. Kissam of this city, who, as a practical surgeon, stood deservedly among the first in his profession, was heard frequently to express his decided disapprobation of any attempt to save the leg in compound fracture, and dislocation of the ankle joint.

† Hennen's Observations, p. 170.

‡ Mr. Hennen in his observations, states, "I have never been fortunate enough to cure a case of the acute symptomatic tetanus." p. 162.

the ankle, by which blow the ankle was compoundly dislocated upon the innerside, the bone projecting through the integuments fully half an inch. This was about 2 P. M. of Friday September 2d, 1824, and at 3 P. M. he was brought to the Hospital. The wound was there washed, the sand which had entered the joint cleansed out as well as possible, the bone reduced, wound dressed, and patient bled. On Saturday afternoon the ankle was extremely painful, swelling and inflammation increasing, leeches and cooling lotions notwithstanding. Dr. Mott resolved to tie the femoral artery, for the purpose of lessening the determination to the part, and reducing inflammation. This operation was accordingly performed, after which the wound of the ankle was drawn together by adhesive straps, and so dressed with lint. On Sunday, after having passed a quiet night, the swelling was found not to have increased, limb of natural temperature, which is less than the heat of yesterday, and pain diminished; wound not examined. Monday, slept well during the night, swelling diminished, heat natural, wound at the ankle offensive, and discharging a thin bloody fluid, poultice to soften dressings and cleanse the part—edges highly inflamed. On Wednesday the wound looked remarkably well, exhibiting healthy and numerous granulations, dres: ung: Res: flav. Thursday, granulations increasing, the wound filling up well and presenting a very healthy appearance; no pains, swelling, or tension in the part, patient expresses himself very comfortable; and thus it was doing uncommonly well until the seventh day from the accident, when trismus, &c. set in and he died."

Although the above case proved fatal, yet we may draw some practical conclusions of importance to our present subject. First, it affords a strong proof in favour of the utility of cutting off the circulation in extensive injuries, and it must be considered as a noble effort of surgery to lessen human misery, and to save the unhappy subject of those accidents from decrepitude. And secondly, it gives us a fair specimen of the fatality attending compound fractures, and

dislocations of the ankle joint. Notwithstanding every effort was made which the science is capable of exerting, and the plan pursued was justified upon every principle of surgery, and the case for a time appeared to sanction its adoption; yet we are led from the result of the case to admit, that immediate amputation would have been preferable, in as much as it would in all probability have preserved life.

In the treatment of wounds and surgical operations, inflammation in its progress is a subject of serious consideration to the practical surgeon, as it frequently baffles his best-directed efforts to arrest its unfavourable terminations; and therefore every practical fact tending to elucidate its nature or treatment, should be impartially considered. It is upon these grounds, that I solicit the attention of surgeons to the propriety of cutting off the circulation to parts endangered by inflammation: not only as it is applicable to wounds of joints, but wishing to extend it to all serious injuries in other parts of the body, and to operations of great magnitude, when it is important to produce an immediate union. I feel the more confidence in urging this practice, as it is firmly believed that it would in the majority of cases supersede the necessity of amputation.*

To excessive inflammation is attributed all the mischief that follows extensive injuries, and the most active means of depletion are carried into operation to lessen irritation and subdue action. We therefore resort to local and general blood-letting, counter irritants, &c. to take off the determination of blood to a particular part, and to reduce its volume. If by these means we are successful, the part recovers its tone, and is soon restored to healthy action. But in case of failure, the vessels of the inflamed part enlarge, become turgid, producing tumefaction and pain; the vessels from the loss of power are unable to discharge their contents, and the blood collects beyond their limits of distension. They give way, and the disease terminates in mortification.

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* Vide Trowbridge's case in Surgery.

It is upon the same principle of lessening inflammation, which has hitherto been pursued, that the present operation is urged; but with this difference: in one case we take off the current of blood from the diseased part, by reducing the strength of the general system, and when suppuration comes on, the constitution is too much enfeebled to support a tedious discharge, and necessity obliges us to remove the extremity. But in the proposed plan, the same indications are answered without seriously affecting the general health. The depletion is entirely local, and confined to the diseased extremity. The injured part has an opportunity of recovering its healthy action before the circulation can be sufficiently restored to do any injury, and in case of failure in uniting the wound by the first intention, all the strength of the constitution will remain to support the subsequent suppuration. It might be objected to by some, lest immediate mortification should follow the operation. Experience however has taught me to believe the collateral circulation will in most cases be sufficient to support the vitality of the extremity. I shall here offer two cases from my note-book in support of this opinion.

CASE V.

A lad, aged 16 years, was brought to the Hospital July 4th 1821, with an extensive laceration of the arm, which he received from the discharge of a gun, while imprudently resting his arm upon the muzzle. The discharge entered the arm about the elbow joint, tearing off the integuments for six inches in length and three in breadth. The nerves, veins, and arteries, lay like cords on the surface of the wound. The muscles lacerated in such a manner as to destroy the appearance of their original structure. The bone laid bare. and in some places denuded of its periosteum; he lay for some hours weak and exhausted; his pulse was small and quick. The extent of the wound led the attending surgeon to believe that the brachial artery, or some of its large branches, were divided, and hemorrhage was expected from the wound, as the system recovered from the immediate shock of the accident. To

lessen inflammation and prevent hemorrhage, the brachial artery was secured by ligatures as it passes out from the axilla, little hope was entertained of saving the arm, but to the astonishment of all who saw the case, there was merely sufficient inflammation in the wound to produce healthy suppuration and granulations. He suffered but little pain during his recovery; and I may venture to assert, that there was not more inconvenience experienced from this lacerated wound, than there would have been from a simple incised wound of the same extent, where the circulation had not been interrupted. He recovered rapidly, and in the course of a few weeks left the Hospital in good health.

CASE VI.

John Mylander, aged 30 years, came into the Hospital, Nov. 29, 1823, for an inflammation of his arm. He stated, that four days previous he felt a slight indisposition, and applied to a doctor for advice, who bled him. That the blood flowed very fast, and there was considerable difficulty in stopping it. On his return home, it began to swell, and was very painful. The incision made by the lancet had healed. The arm was swelled to such a degree that it appeared on the point of bursting; and so very sensible, that he complained bitterly of the pressure from the necessary dressings. He was bled largely, ordered an anodyne, and emollient applications to the arm. On visiting him the next morning, and examining the arm more particularly, I found a distinct fluctuation of matter at the upper part, and on the outside of the tendon of the biceps muscle. I accordingly passed a lancet into the abscess, and discharged at least six ounces of matter. A poultice was ordered, and I left him to visit the other wards. After having passed two wards, the nurse came after me in great haste, stating that the man was dying from the loss of blood. I hastened to the ward, and found him lying on the floor, faint, and covered with blood, which was flying from the arm half-way across the room. I instantly plunged my finger into the wound, and after pushing it to its full length through the sac which had lately contained matter, I

was able to find the artery, and, by pressing with great force, to command the circulation. The attending surgeon immediately saw him, who made an incision down to the artery, and found a wound passing completely through it, about the eighth of an inch in length. After clearing away the clotted blood, which was extensively diffused through the cellular substance, it was secured by ligature. The hemorrhage returned again in two days, when it was found necessary to secure the artery higher up. After this second operation, which completely cut off the blood from the arm through the principal trunk, the man expressed great satisfaction at the almost immediate relief which it gave him. In this case, we might have expected mortification to have followed the interruption offered to the circulation through the principal trunk, as the cellular substance was crowded with coagulated blood for some distance above the elbow to the ends of the fingers; and so great was the tumefaction, that it must have interrupted in a great measure its circulation through the collateral branches. But notwithstanding all the difficulties attending this case, the tumefaction and pain of the arm rapidly diminished; the wound healed kindly, and in four weeks he was discharged cured.

The two last cases made a strong impression on my mind at the time of their occurrence, in consequence of the observation of the attending surgeon, Dr. Mott; and I would here acknowledge my obligations to that gentleman for my first idea upon this subject, with the practical lessons that he has so frequently given me of its importance.*

In further confirmation of the practice which I have endeavoured to support,† I would refer to those late operations of Dr. Mott on the lower jaw, and ask to what circumstance the

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* In six cases in which Dr. Mott secured the carotid artery, for different affections of the head and neck, I uniformly observed the same result, in its lessening inflammation.

† Vide the 2d, 3d, and 4th numbers of the New-York Medical and Physical Journal.

success of those cases are to be attributed, but the previous interruption of the circulation by tying the carotid artery?

In closing this paper, I do it, confidently believing that the practice to which I have essayed to invite professional attention will, ere long, in abler hands, become an established and important rule of surgery in the treatment of inflammation.

Art. V. *Case of* Delirium Tremens, *with remarks.* By Stephen Brown, M. D., of New-York.

A. C. a butcher, aged 29 years, of a sanguine temperament, was taken with chills followed by fever, about 12 o'clock at night of the 5th of August, 1824. Being called to see him at 10 o'clock A. M. of the 6th, found he had a full and strong pulse of 108 in a minute; complains of pain in the head, back, and limbs; has pain and tenderness at the stomach, with nausea. The pupil of the eye somewhat dilated, with a wild expression of the countenance; has some degree of tremor of the hands.

I bled him 16 ounces, ordered a cathartic of jalap and calomel to be given two hours after the bleeding, with a solution of tartarized antimony at intervals. Eight o'clock P. M. of the same day observed the blood drawn in the morning covered with a thick buffy coat, and cupped edges. The cathartic had moved the bowels freely. Had less pain than in the morning; pulse not so full and strong; skin moist.

Ordered a continuance of the antimonial solution with diluting drinks, and mustard cataplasms to the feet.

2d day of his illness, 10 o'clock A. M.—Learned he had slept none last night; skin quite moist—tongue furred and moist. Ordered a cathartic of rhubarb and calomel, with a continuance of the antim. solution. Eight o'clock P. M. of the same day complains of pain in the head—pulse full and strong, and more frequent than in the morning—has tenderness and sickness at stomach, with some heat of skin. Was bled sixteen ounces.

3rd day of his illness, 10 o'clock A. M.—Was informed he had slept none last night. Wild expression of the countenance continues, with dilated pupil, and trembling of the hands—has no pain whatever. Ordered a portion of calomel and rhubarb; continues the antimonial solution. Eight o'clock P. M. of the same day—has pain in the head—pulse fuller and more frequent, with sickness at stomach. Upon a more particular inquiry into the habits of this man, learned he had indulged in a free use of ardent spirits for a considerable time, and had been once before slightly affected in a similar manner.

4th day of his illness, 10 o'clock A. M.—On visiting him this morning, found he was labouring under confirmed "*Delirium Tremens.*" His wife informed me he had been delirious during the whole night. Although this was the first decided appearance of delirium, yet wakefulness, trembling, and a wildness of the countenance had continued from the first attack—had not slept during the last three nights. The hallucination of his mind consisted in his seeing little animals, which he called *horned mice*, about his bed, of which he appeared very fearful, examining with quick motion, and trembling hands every article of his bedding, blankets, sheets, &c. and throwing them out of the room. Finding the bed itself equally infested, and being as he thought several times bitten by them, he abandoned the room, and could not be prevailed upon to return to it during the day. In the other apartment his mind ran on other subjects—was transacting business with absent friends; mistook familiar objects in the room for sur-loins of beef, and other articles of the butcher's stall. He was incessantly in motion, with trembling limbs. The adnata of the eye had become at this time quite yellow. Ordered a cathartic of rhubarb, aloes, and calomel. At 4 o'clock P. M. gave him two common-sized tea-spoonsful of laudanum, with directions that a tea-spoonful should be given him at each succeeding interval of two hours, until he should fall asleep. At 9 o'clock in the evening visited him. Four drachms of laudanum had been taken, but no disposition to sleep, or even to lie down. I now gave him a tea-spoonful more, one also

at 10 o'clock, and another at 11, during which time remaining by him, lest it should not be carried to the point of producing sleep. He now for a short time became more tranquil, and hopes were entertained that he would soon fall asleep. But not long after he became sick at the stomach, and vomited freely. He then became as wakeful and outrageous as ever. All efforts to induce him to take more laudanum were unavailing. His delirium had been so violent during the last six hours, that he thought himself not in his own house. The prevailing anxiety of his mind was to get home, so that now it was only by force that he could be kept in the house, a state of mind which in the delirium of fevers, is invariably looked upon by the experienced practitioner, as holding out a very unfavourable prognosis. I have never observed it in this disease, except in one instance before, and that proved fatal. He had been during the afternoon and evening covered with a profuse perspiration, with violent and general tremor. Being unable to make him take more of the laudanum, and possessing no means of having it administered by enema, I resolved to try the effects of free vomiting, agreeable to Dr. Klapp's method of treating this disease. Accordingly, having ordered five grains of tartarized antimony, with twenty grains of ipecacuanha in powder concealed in preserves, (as he was suspicious of all fluids presented to him) and also having given directions to follow up the operation of the emetic with laudanum, if practicable, I left him for the night, regretting very much that the treatment which I conceived the most applicable in this case, could not be carried to its full extent.

4th day of his illness, 6 o'clock in the morning.—Found him no better; the emetic given at 12 o'clock last night produced free evacuations from the stomach, but he resisted every effort to administer the laudanum. It now appeared that he could not live another twenty-four hours unless sleep could be procured, and that consequently no time was to be lost in endeavouring to effect this object. Finding no difficulty in making him take powders in syrup, I went home, selected the

best opium, weighed and pulverised thirty-six grains with an equal quantity of soda. sup. carb. and divided them into five powders, one of which contained twelve grains of the opium, the others six grains each—with directions that the twelve grains powder be given him immediately, and one of the six grains powder at an interval of each succeeding hour, until he should fall asleep.—Visited him at 10 o'clock, when his wife informed me that she had given him the large powder (containing twelve grains) at 7 o'clock, one of the six grains powder at 8, and another at 9 o'clock; that during the interval of taking the first and second powders, he rejected some fluid from the stomach, but had not vomited since. He now appeared more outrageous than ever, pulse rapid, the whole surface of the body covered with a profuse sweat, feet and legs cold, and violent tremor over the whole system, especially after slight exercise. I now gave him the two remaining powders at one dose—procured some more opium, and at 11 o'clock gave him four grains more, when I left him, with directions to have another powder given him at 12 o'clock, unless he should sooner fall asleep. Returned at half past 1, when I found him recumbent in sleep, or rather a comatose state, breathing with a short inspiration and stertor, and with long expiration; surrounded by his friends weeping. I was informed that he fell asleep about 12 o'clock, when, from the cold, clammy sweat which pervaded the whole body, particularly the coldness of the extremities, and the singularity of his breathing, they had for some time thought him dying. But faint hope had now taken the place of despair, from the fact that a general warmth had diffused itself throughout the whole system. I now felt his extremities, and found them warmer than they had been during the last twenty-four hours—his pulse reduced from 140 to 115 in a minute—the pupil of his eyes were at this time preternaturally contracted. The whole quantity of opium administered was forty grains, from 7 to 11 o'clock, a term of four hours. He had frequent twitching of the hands and feet during this comatose state. His inspirations were short and stertorous, as before stated. His expira-

tions twice or thrice as strong as the natural breathing. Being aroused from his sleep, a mixture of vinegar and water was given him, of which he drank freely, and soon fell asleep again. After directing the further continuance of vinegar and water occasionally, and another four-grain powder of opium, in case he should become wakeful, I left him.

Visited him at 10 in the evening, and found him asleep: his breathing was more free and natural, but the frequent twitching of the muscles of his hands and legs continued, though somewhat abated—had several times awoke during the afternoon, when vinegar and water were given him, and at 4 o'clock a four-grain powder, as the friends thought him more wakeful.

5th day of his illness, at 10 A. M.—Found him in a calm sleep—his limbs free from motion—skin sufficiently warm—pulse full and soft, at 80 in a minute—had taken a four-grain powder early this morning—had drank several times of vinegar and water during the night. Eight o'clock, P. M. of the same day.—Was told he had slept during the whole day, except occasional wakings—had taken also some porter, and arrowroot for nourishment.

6th day.—Pulse 76 and soft—has a clear, moist tongue—no appetite, and great debility. Ordered ol. ricini.

7th day.—Slept well last night—pulse 72 and soft. This morning he eat a light breakfast.

After this he required no medicine, but recovered fast, and soon enjoyed his former state of health.

REMARKS.

With regard to this case, we may remark, that it affords a strong argument against the doctrine of cerebral congestion or inflammation being the proximate cause of this disease: for although we have seen a very considerable number of cases of this disorder, and the delirium in this as violent and outrageous as almost any former instance that has come under our observation, yet it immediately succeeded (if not in part consequent to) the very free depletion as mentioned in the

detail of the case, viz. three bleedings to the amount of forty-six ounces within three days; with the additional depletory means of three active cathartics, and the continued action of antimony in diaphoretic doses, together with antiphlogistic regimen. And from the free evacuation of the stomach and bowels previous to the occurrence of delirium, together with the failure of free vomiting to abate its violence and procure sleep, while it argues against the theory of the gastric pathology of Dr. Klapp, also affords an instance of a failure of relief from the emetic plan of treatment as recommended by that gentleman.

The yellowness of the eyes, in the advanced stage, showed some disturbance of the biliary functions. But if the cerebral affection was symptomatic of the hepatic, as is supposed by Dr. Potter to be frequently the case in the disorder in question, what is that condition of the liver, which, giving rise to the *delirium*, *trembling*, and *wakefulness*, is removed by twenty-four hours sleep produced by opium: since all known morbid affections of this organ are either *incurable*, or slow in their removal?

The pathology of this disease appears to be far from being well understood. We offer this case to the notice of the profession as another instance, in addition to those heretofore communicated, of the happy effects of large doses of opium in a violent and almost hopeless case of the disorder, at a stage, too, when, from what has come under our notice in other and fatal cases, we have a firm belief that this man would have soon died had not sleep been obtained. Vinegar was prescribed after the specific effects of the opium had taken place, with a view to counteract its narcotic operation; as the opium was administered more rapidly and in larger doses, in this than in any former case that has occurred to us in practice, the result of the treatment was fortunate indeed. How far the vegetable acid tended to operate favourably, we leave to individual opinion; at the same time beg leave to suggest, whether, in *extreme cases*, opium might not with propriety be given more boldly, with the anticipation of counte-

racting its narcotic effects with vegetable acids, when the patient shall have been brought under its soporific influence. Or whether a combination of opium with the vegetable acids—or of administering it in the form of "the black drops," might not, as a general rule, be a more safe and eligible practice than the use of opium alone.

ART. VI. OBSERVATIONS *on the* SULPHATE OF QUININE, *and its adulteration.* By ISSACHAR COZZENS, Manufacturing Chemist. Read before the Lyceum of Natural History of New-York, September 27th, 1824.

IT is well known that almost every article of frequent use or consumption is more or less adulterated. When such alterations are made in food, the evil is enormous, but is nevertheless hardly so heinous as the frauds employed in medicines.

It has been asserted that there is much of the caprice of fashion in the prescriptions of physicians, and that certain medicines are much in vogue for a short time, and then are totally relinquished. It will, however, often be found, that the most valuable articles of the materia medica, more particularly those of a costly nature, invariably invite adulteration, and being thus rendered inert and inefficacious, are abandoned by the physician. The red bark which was formerly considered the most powerful and active of all the kinds of bark, has in consequence of its extensive adulteration, been lately neglected, (as I am informed,) by most physicians. When, however, such a cheap article as the syrup of buckthorn is the subject of sophistication, we can readily believe that there are very few medicines but what may be altered or vitiated.

With a view of putting the community on their guard respecting a new and excellent remedy, I have hastily drawn up the following observations on the sulphate of quinine.

The experiments may be repeated by any one, and require the simplest apparatus.

Sulphate of quinine, when pure, is in grayish white needle-shaped crystals. These are usually broken in taking them out of the vessel in which they are manufactured, and repacking them in phials. When held against the sun, or a strong light, the glittering appearance produced by the faces and angles, exhibits their crystaline structure. If a small portion be put into lime-water, a copious flocculent precipitate ensues; this is, however, rather a test of the presence of quinine than of its purity.

Place a small quantity, (the half of a grain will be sufficient,) on a piece of unglazed porcelain, or a common tobacco pipe; if heat be applied to this, the pure quinine will first melt and spread a little; it then turns to black, and burns away leaving nothing but a dark stain, with the peculiar smell of bark. If any earthy matter is present, it will be left on the pipe.

Dissolve the same quantity in pure rain or distilled water in a silver spoon, and boil it over a few coals, or a small flame. If the quinine is adulterated with starch, flour, or any similar substance, a paste will be found; if the sulphate or carbonate of lime, or magnesia, or any earthy matter is present, it will not form a clear transparent solution with boiling water.

Some persons are in the habit of offering for sale what they term a tincture of quinine, which is nothing more or less than a solution of quinine in alkohol, or dilute sulphuric acid. I do not know the value of this preparation, but as it is clearly impossible to determine the actual quantity of quinine thus employed, it is recommended in all cases to make use only of the quinine in the form of the white crystaline powder.

The excellence of this medicine, its high price, and its probable extensive employment in practice, will, it is feared, lead to so much adulteration, that some easy mode of ascertaining its purity becomes highly important..

Art. VII. A Case *of* Poisoning *by* Opium *successfully treated by cold affusions.* By Dr. Barent P. Staats of Albany. With an additional Case, by John B. Beck, M. D.

Having lately seen the application of cold water highly recommended in cases of poison from *opium*, I take the liberty of transmitting to you the following case which lately fell under my care.

On Saturday August 7th, a mulatto fellow of this city took three drachms of solid *opium* for the purpose of destroying himself; he was discovered three hours after lying in the woods, in a stupified state, perfectly insensible. A physician was immediately sent for, who attempted to puke him, but to no purpose; finding his efforts unavailing, at last abandoned him. I was then sent for, and when I arrived, found him as it were, in the arms of death. His breathing was stertorous and *oppressed*, with every other symptom of approaching *apoplexy*. I immediately opened the jugular vein, and drew away twenty ounces of blood. I then commenced pouring cold water on his head, which I continued for the space of fifteen minutes, when I was surprised to see him open his eyes, and appear sensible; but immediately on withholding the water, he fell asleep. I repeated the water as before, with the same effect; and by the constant application of the water at intervals of a few minutes, for the space of six hours, *finally* succeeded in rescuing him from a premature death.

Additional Case. By John B. Beck, M. D.

In addition to the foregoing case, I am induced to record another of a similar character, in which the efficacy of this new method of treating persons under the effects of large doses of opium, was beautifully illustrated. On Friday the 15th of October, I was called late in the evening to an infant about two months old, to whom its mother had given through mistake, twelve drops of laudanum, instead of paregoric. Discovering her mistake shortly after, and being alarmed at

the effects which it produced on the child, she sent for assistance to a neighbouring apothecary, who directed the administration of antimonial wine. A tea-spoonful of this was accordingly given, but without the least effect in exciting vomiting. Shortly after this, and about one hour after the laudanum had been given, I first saw the child, and found it in a state of stupor, from which it could not be roused by any ordinary means. With a view, if possible, of still exciting vomiting, I immediately poured down a large dose of tartar emetic and ipecacuanha. After waiting a few minutes, and finding no effect, I commenced pouring cold water from a pitcher on the child's head, which was held over a tub. In a very short time the child seemed to feel the impression of the water, and exhibited symptoms of returning sensibility. On stopping the application of the cold affusions, it speedily relapsed into its former state of stupor. The water was again poured on the head, which soon roused it again, and during its use it vomited very freely. I now suspended its use for ten or fifteen minutes. Finding the symptoms returning, recourse was again had to the water, and with the same effect. It roused the child, and again brought on vomiting. After this it gradually revived, and the next morning was as well as usual.

The credit of originality with regard to this practice has been very justly conceded to Mr. Wray, by whom it was announced to the public in 1822. It is due, however, to a professional gentleman of high respectability, Dr. Samuel W. Moore of this city, to state that so far back as 1815, the very same practice was used by him and with success.

REVIEW.

ART. I. A TREATISE *on the* DISEASES *of the* EYE; *including the doctrines and practice of the most eminent modern surgeons, and particularly those of Professor Beer.* By GEORGE FRICK, M. D. &c. Baltimore, 1823. pp. 320. 8vo.

UNDER a very unpretending form, Dr. Frick has here presented us with a valuable and useful compend on the diseases of the eye. The growing importance attached to this subject in this country, is sufficiently evinced by the recent establishments of numerous institutions devoted exclusively to the relief of this interesting class of affections; and it also indicates the necessity for such a treatise as the present. The author has enjoyed opportunities of no ordinary extent to improve and perfect himself in his subject. An attendance of several years at the hospitals of Great Britain, and more especially of the Continent; an intimate intercourse with Professor Beer, so well known for his celebrated work, "*Lehre von den Augenkrankheiten;*" and finally, his situation in the Baltimore Dispensary, for the cure of the diseases of the eye, have afforded him a scope for observation and study seldom enjoyed by our professional brethren in this country. In contributing the result of these numerous advantages to the stock of professional knowledge, Dr. Frick has rendered his countrymen an important service. And when it is considered that this is the first attempt made here to furnish physicians, and students more especially, with a manual on this much neglected but highly important branch of medical and chirurgical science, we trust that his claims will not be slightly regarded

or overlooked. With these few preliminary observations, we proceed to an analysis of the work, accompanying it with such remarks as we may deem necessary.

Ophthalmitis.—This affects equally all the optic membranes; exhibiting, in addition to the usual characteristics of general inflammation in other textures, great sensibility to light, and an increased flow of tears. After the occurrence of pain, the sclerotica is seen to be slightly red, the eye is dry, hot, and moves with difficulty in its socket, owing to the distended state of its conjunctival covering. The pain is at first lancinating through the eye-ball and orbit, but becomes throbbing as suppuration approaches—the redness is diffused, and there is a solid deposit of lymph in the palpebral conjunctiva, producing the *chemosis* of the English ophthalmogists. Dr. F. in a foot note, draws an obvious distinction between the turgescence of the membrane and sugillatio—an extravasation of blood from external violence: the colour of the latter being of a deeper red, from the coagula it contains. As the inflammation progresses, the neighbouring glands, which were primarily stimulated to increased secretion, become dry, but towards the termination of the disease they pour forth an increased flood of matter; as the second stage approaches, an effusion of blood, or pus, frequently takes place in the chambers of the aqueous humours, and if to any extent, is accompanied with high sympathetic fever, and total destruction of the organ. In enumerating its various causes, our author particularises derangement of the digestive organs—atmospheric changes—the presence of foreign bodies—and the propagation of the inflammation from the brain itself through the medium of its tunics investing the optic nerves. The conjunctival coat of the eye being a similar and continuous membrane with that lining the intestinal canal, satisfactorily explains their existing sympathies.

No state of atmosphere predisposes more to opthalmia than the conjunction of heat with moisture: hence the worst kinds arise in warm climates, from exposure to the night air.

Treatment.—This is modified by the nature of the exciting cause, the removal of which is primarily indicated. Should a febrile disturbance of the constitution exist, general and local bloodletting is to be premised, followed by saline cathartics and antimonials. Great difference of opinion exists as to the mode of detracting blood by leeches. Ware prefers their application to the temple. Vetch to the lower lid. Our author adopts the practice of Beer and Scarpa in applying them over the fascial vein, as producing the most rapid abstraction of blood. It is, however, perfectly arbitrary, provided the desired effect is produced. Scarifications are not admissible during the acute stage; they should be made deep, and frequently, for which purpose the scalpel is the best instrument. Blisters are to be applied behind the ear, or to the nape of the neck, in preference to the temple; our author probably thinking, with Vetch, that they increase the action of the subjacent arterial trunks in the latter situation. Dr. Frick properly cautions against the use of stimulant collyria during the acute stage; he prefers tepid applications to cold, in which opinion he is supported by Professor Beer and Mr. Travers, on the ground that cold, being a tonic, causes a reaction with an increase of pain. In irritable habits of a particular nature, we believe the opinion to be well founded; but we have remarked the disease to yield with equal facility under both plans of treatment. As soon, however, as the capillaries are in a state of congestion, warm applications are to be suspended, and cold lotions, astringent collyria, or stimulating ointments, are to be employed. To conclude this chapter, the two most important indications are, in the first stage, to preserve the integrity of the cornea, the appearance of which should always regulate the extent of the antiphlogistic regimen. In the second, or subacute stage, to avoid the tendency to debility in the organ favourable to the suppurative process—in the former, we have much to expect from the free use of antimonials—in the latter, from the free exposure of the eye to the dry air.

Conjunctivitis Catarrhalis.—This is a species of glandular inflammation of the eyelids, that frequently prevails as an epi-

demic simultaneously with affections of other mucous surfaces, as catarrh or influenza, and is termed by Mr. Travers, a mild form of suppurative inflammation of the conjunctiva : a term, we think, preferable to catarrhal, which Dr. Frick has adopted from Beer. The first sensation the patient experiences, is an itching or burning in the borders of the eyelids, the secretions of which are entirely arrested—deep-coloured superficial vessels run in fasciculi towards the cornea. The inflammation, however, says our author, is readily distinguished from that of the sclerotica, by the rapid increase and subsidence of the vessels, which also accompany every motion of the palpebræ. He might also have added, that there is a much less sensibility to light. The sensation of grains of sand being lodged upon the eye, is accounted for by the enlargement of the conjunctival vessels ; it is, however, also owing to the inflammation extending to the sclerotica. As the disease progresses, the cheeks are excoriated by the lachrymal secretions, which, not being blended with mucus, are excessively acrid. This, after a few days continuance, is succeeded by a puriform secretion from the lids, which inspissates in flakes on the cornea, and makes it appear to the patient as if he was looking through a prism ; minute pustules also form along the edges of the eyelid, called tæniæ ciliares, also at the junction of the cornea and sclerotica, and sometimes on the cornea itself. These, says our author, are probably the inflamed mucous glands of the conjunctiva, and are similar to apthæ in other mucous membranes. Like all the varieties of conjunctival inflammation, it is frequently accompanied by disorder of the other mucous surfaces. Its principal cause may be referred to an epidemic state of atmosphere ; the disease is, however, doubtless multiplied by contagion. as is evident by the extent of its progress in schools, armies, &c.

The treatment of this form differs but little from that of general ophthalmia. Frequent attention to diet, cathartics, use of cold water, with removal to pure air, are usually sufficient. Should, however, the disease progress, topical bleeding, and a suppurating surface are indicated. During the se-

cond stage, astringent lotions, as the alum solution, with general tonics, will generally annihilate the disease. Its peculiarities appear to consist in its not requiring general depletion to any extent, and in its connexion with chylopoietic derangement.

Strumous Ophthalmia.—This form is peculiar to young children; and appears commonly between the first and sixth year. There is considerable inflammation of the conjunctiva; the marked characteristic is, however, intolerance of light, which our author thinks, with Travers, is owing to a morbid sympathy of the retina with the primæ viæ. In consequence of this, the surgeon finds great difficulty in separating the lids, which Dr. Frick recommends to be effected by placing the head of the patient between the knees of the surgeon, and carrying the fore-finger of the right hand over the orbit, and raising the superior palpebræ with its point. It is frequently accompanied by pustules, which form at the edge of the cornea, in which case, the inflammation is diffused, the vessels radiating towards the cornea. In severe cases, the membrane becomes opaque, owing to the thickened state of its conjunctival covering, which Professor Beer terms *Pannus*: as in scrofulous affections generally there is an absence of pain.

A great discordance of opinion exists among writers as to the treatment of this species of ophthalmia. The main indication is, however, to improve the general health, on which the disease indirectly depends. As every thing debilitating is consequently objectionable, our author condemns powerful antiphlogistic means, but recommends the improvement of the secretions generally, by alteratives, combined with opium and antimonial diaphoretics, and a proper attention to regimen. Every thing indigestible is to be avoided, and the eye is to be unincumbered with bandages. When the cornea is opaque, the blue pill is to be given, so as to affect the system slightly. Excessive irritability is to be removed by a blister to the nape of the neck, and occasional narcotic fumigations. The mineral acids, with bark, either alone or combined with sedatives, are of great service as general tonics. Should a thickened

state of the conjunctival covering remain, it is to be removed by local stimulants, as vin. opii. ung. hydrarg. nit. and circular sections of the vessels on the margin of the cornea.

Purulent Ophthalmia.—This is the severe form of suppurative inflammation of the conjunctiva of Mr. Travers. Our author questions the propriety of the name by which he has designated it, and prefers that of *Ophthalmo Blennorrhœa*, on the ground that it is not satisfactorily determined whether the secretion is purulent or not. We cannot perceive any advantage Dr. Frick has gained by this nicety of distinction. It is well known that the properties of the secretions of all the mucous membranes throughout the body are changed during inflammation, and in this instance the term suppurative is indicative of its rapidity, and the consequent danger attending it. The following description of the disease, as it appears in infants after birth, to which our author confines himself, is so accurate, that we shall give the substance of his own words. It attacks the child between the period of ten days to four months after birth, and rarely after the second or third year. A slight redness of the palpebral conjunctiva is first perceptible, to which succeeds a slight mucous or purulent secretion from the lids; there is an impatience of light, but the conjunctiva covering the globe remains unaffected; the symptoms soon however become more violent, constituting the second stage of the complaint; there now exists a greater redness and swelling of the conjunctiva, and an increased purulent discharge, which is of a yellowish or gray colour, much rembling true pus; the intumescence is particularly referrible to the superior palpebræ, which is so protruded from the eyeball, as to cover entirely the lower one. Great care, says our author, is now necessary in the surgeon when examining the lids, lest the upper one become everted, in which case it is often impossible to reduce it; the pain increases, *pari passu*, with the inflammation, and like most forms of conjunctival inflammation, is periodical in its attack; an exacerbation coming on about bed-time, which is usually confined to the globe itself, though sometimes the cranium participates; oc-

casionally a hemorrhage takes place, from the enlarged vessels of the palpebræ, which is always attended with an amelioration of symptoms. Should the disease progress with great violence, the cornea becomes clouded or opaque, and sometimes suppurates and bursts, affording the patient a momentary relief from the great distention of the organ. In ordinary cases, the cornea remains uninjured, and the disease terminates by a viscid discharge from the eyelids, which, with common attention, soon disappears. Dr. Frick considers the above description equally applicable to the Egyptian ophthalmia, which he is of opinion, existed in England previous to the expedition to Egypt. Without entering into the controversy on this point, which as regards practical purposes, is one of little moment, we would observe that we consider the opinion of Mr. Vetch as conclusive, who considers it a peculiar endemic, brought from Egypt by the troops, and propagated by actual contact of the discharge. It differs from the usual forms of purulent ophthalmia, in not affecting the general health, and in its attack commencing in the lower eyelid; there is also less pain than in the other species of ophthalmia. The cause which produces this aggravated form of the disease, is doubtless exposure to the night air, which, from the great heat, and heavy dews of that climate, must be particularly prejudicial. With respect to the exciting cause of the disease in infants, to which the foregoing remarks are particularly referrible, our author is of opinion, that it may be traced to the sudden change of the condition of the child, from the womb to the world, and to the atmospheric vicissitudes to which it is exposed after birth: we should deem this more probable than the commonly received opinion, that it is owing to the contact of the eyes of the infant with some acrid secretion from the vagina of the mother.

Treatment.—The first object is to arrest the inflammation, by relieving the engorged vessels; to affect this, venesection is the most powerful expedient. Dr. Frick objects to the practice of Mr. Vetch, and other English surgeons in bleeding ad deliquium, and prefers a common bleeding, to be repeated

if necessary. Membranes like the conjunctiva, admitting of great distention, although partially emptied, will readily resume their former activity, and we should thence prefer a powerful impression to be made at the onset of the disease. Free evacuation from the bowels are to be promoted, for which purpose our author prefers calomel and rhubarb conjoined with antimonials. In patients of a weak constitution of body, the discharge being profuse and ichorous, with a flabby conjunctiva, general tonics and a nourishing diet are to be substituted, which will frequently arrest sloughing of the cornea, after it has commenced. As local applications, any of the styptic solutions, as alum, or sulph. zinc. will be sufficient. Beer prefers vin. opii., and Vetch speaks highly of the undiluted liq. plumb. acet. ; all these, however, act on one principle. Blisters, or tart. emetic ointment behind the ears, and the free exposure to dry air, are never to be omitted.

Gonorrhœal ophthalmia.—The existence of this form of ophthalmia has been repeatedly affirmed and denied. Dr. Frick, although he has never seen the disease himself, thinks the testimony of such names as Beer, Scarpa, and Vetch, are sufficiently corroborative ; the symptomatology is similar to the other forms of purulent ophthalmia, only more violent. Two causes are generally stated as producing it ; the suppression of the gonorrhœal discharge, and the communication by actual contact of it to the eye ; whether metastasis ever takes place from the first cause, is questionable, and we should rather think it owing to the connecting sympathies which exist. Mr. Vetch has unequivocally proved by experiment, that it is excited in the second way, but views the frequency of its occurrence, diminished by the knowledge of the fact, that a person cannot produce the disease in himself by direct application of the virus, secreted by his own urethra, but may in another. Our author now details two cases, one by Sir Astley Cooper, the other by Mr. Abernethy, where the gonorrhœa and ophthalmia alternated with a rheumatic affection of the joints. Neither of these are, however, sufficiently clear to determine, whether the conjunctiva or sclerotica were

individually or jointly affected. Dr. Frick thinks, from the description of Mr. Vetch, that it must have been a rheumatic inflammation of the sclerotic coat; we confess ourselves at a loss to determine, but should conclude from the several descriptions of various authors, that in those cases where the ophthalmia arose from sympathy with the urethra, the inflammation affected the sclerrotica and iris; and when it was produced by direct application of the virus, the conjunctiva and cornea were the seats of the disease. It, however, so rarely occurs, that we will close this chapter by observing, that the cure of these varieties is to be effected by the same treatment as detailed under the head of Purulent Ophthalmia.

Rheumatic Ophthalmia. Sclerotitis.—This is rarely a primary disease, being generally metastatic of rheumatic inflammation; and from its ready extension to the iris, is chiefly known as iritis. Dr. Frick describes it as commencing with a lancinating pain in the orbit, which subsequently extends over the whole side of the head, an exacerbation taking place when the patient is warm in bed. The attack is frequently preceded by general rheumatic pain, which, as the disease locates itself, subsides. An increased redness of the sclerotica is now apparent, with intolerance of light, and an increased flow of tears. The obvious distinctions between the colour of the vessels in sclerotic and conjunctival inflammation, says our author, is, that in the former, they are of a lively carmine, or rose colour, the redness is also diffused over all the sclerotica, and is deeper situated: it might also be added, that the vessels of the sclerotica always accompany the motion of the eye, a circumstance peculiarly characteristic. The intolerance of light is not very great until the vessels shoot over the cornea, it then becomes a most distressing symptom. As the disease progresses, the redness is increased by the vessels of the conjunctiva joining those of the sclerotica; the cornea also loses its transparency, small vesicles form on its surface, which degenerate into superficial ulcers: these, in favourable cases, disappear with the other symptoms without leaving cicatrices. Should, at this period, the disease not be arrested, a vascular

zone forms at the margin of the cornea ; the pupil is now contracted, the colour of the iris towards its inner circumference being changed to green, produced, Mr. Vetch thinks, by the greater expansion of its fibres. Atmospheric changes, such as excite inflammation in similar membranes, are the causes to which this species of ophthalmia is particularly referrible. Usually but one eye is primarily affected, the other seldom predisposing until towards the termination of the disease. The outline of treatment is so similar to that of general inflammation, that we shall be very brief. Venesection and local abstraction of blood are particularly necessary in the first stage. Our author agrees with Mr. Vetch in censuring temporal arteriotomy, on the ground that it is followed by an aggravation of the disease ; the arteries rapidly accommodating themselves to the exigency of the parts which they supply. The stomach is to be cleared by an emetic, followed by an active cathartic. Although mercury does not appear to be a specific in this disease, as in iritis, its exhibition to a certain extent is peculiarly efficacious. As the skin is usually dry and hot, antimonials in nauseating doses are never to be neglected. To palliate the pain and irritability, blisters and narcotics are powerful auxiliaries. Mr. Wardrop recommends the evacuation of the aqueous humour when great tension exists, which measure our author approves. After the violence of disease has been subdued, vin. opii. is to be applied to the eye with a camel's hair pencil.

Iritis.—From the danger attendant on this form of ophthalmic inflammation, and the unerring efficacy of the remedy employed in subduing it, we consider it entitled to particular notice. Its symptoms are modified by the causes which produce it, which may be either external, or arising from a peculiar diathesis, as syphilis or gout.

Idiopathic iritis is described as commencing with an obtuse, deep-seated pain in the eye, causing a sensation as though the bulb was pressed on from without, owing to the extreme distension of the vessels. The pupil is contracted, but retains its circular form and central position ; the eye becomes sensible

to light, and there is a change of colour in the iris, which becomes either reddish or green; its margin is puckered and inverted; the vision is now indistinct, either from an effusion of coagulable lymph, or to the inflammation extending to the capsule of the crystalline lens. During the first stage, the redness of the eye is proportionately less than the other symptoms; but as the disease progresses, the sclerotica is traversed by innumerable convergent vessels, which, concentrating around the cornea, form a beautiful rose-coloured zone. Here Dr. Frick takes occasion to remark, that this appearance occurs also in strumous ophthalmia, and cannot therefore be called characteristic. The pupil now becomes angular and irregular, owing to adhesive inflammation having taken place between the fibres of the iris, from which projects a gray ash-coloured membrane, forming a medium of adhesion with the capsule of the lens. Ultimately an orange-coloured tubercle forms upon the iris, which, suppurating, the purulent fluid it contains falls into the anterior chamber of the aqueous humour, forming the disease called hypopion. On the question whether pus is ever secreted by the iris, our author says, "Many pathologists, and among the number Dr. Farre and Mr. Travers, have supposed the iris incapable of taking on the suppurative stage of inflammation, and account for this appearance of pus in iritis from its being accompanied with ulcers upon the cornea, opening internally; others have termed this a spurious hypopion, and suppose it to consist of effused coagulated lymph. It is very probable, that the different terminations of iritis in adhesion or suppuration, depend upon the different tissues of the iris that are affected. Thus, if the inflammation be confined to the serous membrane covering the proper substance of the iris, coagulating lymph is effused; if, on the other hand, the cellular texture, or the substance of the iris be the part primarily attacked, we have abscess and suppuration." Sometimes a union takes place between the inflamed surfaces of the iris and cornea, producing staphyloma.

Iritis Syphilitica.—When iritis appears in a syphilitic patient, the cornea is uniformly obscured, but the iris is less irritable. The pupil becomes angular, and is drawn inward and upward toward the root of the nose—intolerance of light and lancinating pain in the eye-brow increasing toward midnight and abating toward morning, attend. Coagulable lymph is effused, and when the disease is allowed to progress, reddish tubercles are seen on the borders of the iris.

Iritis Arthritica.—The characteristic feature of this variety, as distinguished from the preceding one is, says our author, that the inflammation does not extend to the margin of the cornea, but leaves around its edge a narrow bluish ring, which becomes more perceptible with the increasing vascularity of the conjunctiva. We should be inclined to think that this could be most readily observed during the early stage of the attack; as during the progress of the inflammation, the vessels of the conjunctiva penetrating the sclerotica, would close up the space referred to. Mr. Vetch considers the distinction between conjunctival and sclerotic inflammation apparent; but says that he has never been able to perceive any difference in the arrangement or appearance in the vessels of the latter membrane sufficiently distinct to indicate the peculiarity of the exciting cause, or specific nature of the case.

The disease is modified by the irritability of the patient's habit, the iris exhibiting diversified appearances. As the termination, however, is always the same, unless proper remedies are employed, we will not detail them.

The exciting causes enumerated are, wounds of the membranes consequent on the operations for cataract or artificial pupil—check of the cutaneous secretions during an attack of gout, or a mercurial course.

Treatment.—The first indication is to remove the violence of the inflammation, which is to be effected by the means already enumerated in sclerotitis. Blisters do not appear to be as efficacious as in other forms of ophthalmia. The two subsequent points to be kept in view are to prevent or remove the effusion of adhesive matter, and to guard against the adhesion

of the iris to the capsule of the lens. The first is to be effected by friction of ung. mercurial. et opii to the eye-brow, and by the internal exhibition of calomel and opium until the system is affected. Ext. belladon. hyosciam. or stramon. will prevent the latter. Dr. Frick thinks no ill effects arise from the exhibition of narcotics, except when carried to excess, or improperly applied. Their modus operandi he imagines is by inducing a state of palsy in the nerves, to which they are immediately applied, which state is communicated by sympathy to those which supply the iris. He has observed a similar dilatation and paralysis in hydrocephalus and in dying persons. When a syphilitic taint exists, this must be radically cured on the principles laid down in venereal diseases, or the patient will be subject to renewed attacks from any exciting cause. The excruciating nightly pains in the head are to be removed by frictions of ung. hydrarg. et opii, and foul ulcers on the cornea by a solution of the lapis divinus. In arthritic iritis general depletion and the free exhibition of mercury are not as indispensable; local detraction of blood and mercurial frictions being usually sufficient. Colchicum has been much extolled in this form, but experience has not finally decided on its merits. As gastric derangement is a usual accompaniment, we should think emetics and cathartics important adjuvants. Blisters behind the ear, or tartar emetic frictions, are never to be omitted.

Ophthalmitis interna.—This appears to be an insidious form of sclerotic inflammation, in which the tendinous expansions about the cranium largely participate. If suffered to progress, it becomes iritis. There is little or no apparent inflammation in either the sclerotica or conjunctiva, the pupil and iris first showing the evidences of disease. It fortunately is of rare occurrence, and calls for the same treatment as iritis, only if possible more vigorous.

Of the Diseases of the Conjunctiva. Pterygium.—Of this affection there are two kinds, the membranous and fleshy, or, as our author calls them, the pterygium tenue, and peterygium crassum. The first is a thin film or nebula of the sclerotic

conjunctiva, its figure is pyramidal, with the base towards the caruncula lachrymalis. It extends towards the cornea, having a few straight, long, and detached vessels on its surface. The latter is a sarcomatous growth beneath the sclerotica, with a tongue-shaped extremity, which is formed by the deposition of lymph in the interstices of the membrane. It is different from pannus, which is merely a chronic thickening of the conjunctiva. They are to be removed by dividing the vessels at the base with a scalpel, and afterwards dissecting off the membrane with a pair of curved scissors; when it does not, however, encroach on the cornea, Mr. Travers recommends it to be let alone, and when it does, he advises the portion which covers the cornea to be removed by the application of escharotics, and never to be dissected off.

Tumours of the Conjunctiva.—These occur in the cellular tissue, which connects the sclerotica with the conjunctiva; they are usually of an adipose or cartilaginous nature, and like all excrescences of this membrane, are removed by excision; their reproduction being prevented by slight stimulants.

Diseases of the Cornea. Opacities and Specks.—The cornea frequently becomes opaque, in consequence of inflammation in the vessels covering or surrounding it; the extent of its affection being various, from a slight haze to a perfect opacity, our author has made three divisions. 1st, A condensed or increased state of the interlamellar secretion, commonly termed, nebula. 2d, The formation of a pseudo membrane, leucoma; and a third variety, that in which the lamellæ unite, albugo. Nebula usually impedes vision, but seldom destroys it; leucoma and cicatrices occupying the centre of the cornea, frequently cause total blindness. In leucoma there is a pearly opacity, which, when it occupies the centre of the cornea, so contracts the sphere of vision, as to render the patient blind, except by twilight, when the expansion of the pupil admits the rays of light through the diaphanous portion. Cicatrix, or albugo, is either the consequence of a wound or ulcer of the cornea; and when it is situated over

the pupil, becomes an impediment to distinct vision. It is frequently produced by burns, or the application of corroding substances to the eye; nebulous opacity is to be removed by stimulating collyria, or ointments: of the former, the best are the solution of nit. argent, and hydrarg. oxymur.; of the latter, our author gives different formulæ; the basis of them all is, however, mercury in some shape. In all obstinate cases a slight mecurial action should be instituted. When the plexus of vessels shoot toward the opacity, circular incisions around the cornea should be made.

Ulcers of the Cornea.—These either primarily occupy the external surface, or are interstitial, and are usually the consequences of severe ophthalmia, or chemical injuries done to the cornea. They often gradually deepen and enlarge, and penetrate the inner coat of this membrane; the aqueous humour then escapes, and the iris approximates, constituting procidentia iridis. As there is usually considerable inflammation of the conjunctiva, antiphlogistic treatment is called for. The ulcer should be touched with a solution of argent nit. and in urgent cases the system should be put under the influence of mercury. When the ulcer is interstitial, and the constitution feeble, tonics are to be employed, together with opiates and local stimulants. Procidentia iridis is to be touched with an escharotic, or snipped off with a pair of scissors.

Staphyloma of the Cornea.—Dr. Frick divides this affection into total or partial. In the first there is a complete dilatation of the membrane of the cornea; in the latter it yields at a particular point. They both present conical eminences of a bluish or pearl colour, and are immediately dependent on an increased quantity of the aqueous humour. When irritation and deformity is produced by the eyelids being unable to close upon the tumour, it should be excised, for which operation suitable directions are given. Stimulating applications have been recommended for their diminution, but with little effect. Compression should be never employed. The interlamellar texture of the cornea is sometimes absorbed without

adhesive inflammation taking place. In this case it retains its transparency, but renders the patient short-sighted. No efficacious remedy has yet been discovered.

Mydriasis.—A permanent dilatation of the pupil is usually symptomatic of amaurosis. When idiopathic, it is consequent on blows, which induce a want of sensibility in the retina. The remedies indicated, are to relieve the disease on which it depends, or to remove the atony of the nerves by stimulating applications, scarifications, and setons, which sometimes succeed.

Myosis.—An opposite condition of the pupil here exists, and in some cases a complete obliteration is the result, which by our author, is termed *Synizesis.* It arises either from an undue degree of sensibility in the retina, or is the effect of iritis. Artisans, who exercise their vision on minute or glaring objects, are subject to this affection, the pupil in these cases forming a habit of contraction. It also is consequent on the operation for cataract, coagulable lymph, or a portion of the lens, blocking up the pupil.

Synechia—Is divided into anterior and posterior. The first signifies an adhesion of the iris to the cornea ; the latter, to the capsule of the lens. They are both incurable when firmly established.

Artificial Pupil.—Cheselden was the first who operated in cases of artificial pupil by making a section of the iris, and is said to have been repeatedly successful. He made use of a couching needle, with a cutting edge on one side, and divided the iris transversely. Other operators afterwards failing to succeed, owing to the closure of the wound, new plans of operating were devised. Among the msot important of these, are the following : That of Wenzel, who made a semilunar incision through the cornea and iris, and then cut away a small portion of the latter, by introducing a delicate pair of scissors through the aperture—Great inflammation and entire destruction of the organ sometimes accompanying this mode, Mr. Gibson of Manchester, practised the evacuation of the aqueous humour, and the excision of such part of the iris, as pro-

truded itself. Scarpa tore the iris from its ciliary attachments, but great hemorrhage is usually the result. The operation, in whatever way performed, is far from being uniformly successful. The pupil should always be made at a point where the cornea is transparent, and the operation is contra-indicated when one eye is sound, or when from appearances, a diseased state of the inner membranes or humours exist.

Amaurosis.—This affection may be either organic or functional. The vision is not always wholly interrupted, the patient being enabled to distinguish large objects. He first notices his sight to be interrupted by small bodies floating before the eye, called muscæ volitantes; or when reading, the letters of the book appear transposed. Again, there is an oscillation of objects, or double vision. Light affects amaurotic persons differently, some being unable to bear the stimulus, others seeking it. It may be sudden or progressive in its attack, according to the nature of the exciting cause. The morbid characteristic in either case, is the pupil no longer obeying the stimulus of light; its circular form is somewhat changed, and there is a coloured spot in the fundus of the eye, as in the horse or sheep. Severe pain in the orbit and temples is an attendant symptom. When any of the other senses are affected, there is but little prospect of a recovery. It most frequently occurs in middle-aged persons with dark eyes. The exciting causes are undue exercise of the eye, a long residence in dungeons, mines, &c. It is also a consequence of long disease, especially where the nervous system has been particularly affected, the indulgence of depressing passions, and profuse discharges of any kind; the exhibition of narcotic substances in excess, as opium, belladonna, &c. Another cause, says our author, which is but little noticed, is a deficiency of the pigmentum nigrum. This is necessarily incurable. A disordered state of the abdominal viscera is perhaps a more frequent cause than any above enumerated. Idiosyncrasy of diet also sometimes produces it. Beer saw a case occasioned by the use of chocolate. The prognosis is

always the most favourable when the attack has been sudden. When one eye is affected, the other soon becomes so. Dr. Frick considers the prevalent opinion of the disease being most readily cured when the pupil is least dilated, as erroneous.

Treatment.—This is almost exclusively constitutional, and is confined to improvement of the secretions, generally, particularly those of the digestive organs. The blue pill as an alterative, followed by bitters, with healthful exercise, are the most important means. Under local remedies, may be included abstraction of blood from the organ, and blisters or tart. emetic ointment behind the ears. All other topical remedies, including galvanism, the application of irritating substances, &c. are worse than useless. Under the head of depletion, it may be remarked, that there is an atonic state of congestion in the vessels of the eye, which general or local bloodletting only aggravates.

Cataract.—We can but glance at the pathology and treatment of this important disease, to which our author has devoted nearly 70 pages of his work, and to which we refer our readers for much useful and interesting information. The opacity may be either in the crystalline lens, or in the capsule. In the first case, it is esteemed lenticular, in the latter, capsular. During its incipient stage, it may be mistaken for amaurosis. The diagnostic differences, our author alludes to in pages 148 and 49, to which we refer. Several varieties are now enumerated.

Hard Cataract—Here the lens is smaller than natural, and of a dull white or horn colour, the nucleus or centre being dark.

Caseous Cataract.—Greater loss of vision here occurs, the lens being much enlarged, and of a flocculent appearance.

Lacteal Cataract, from its colour, resembling skimmed milk. This is a mere change of density in the lens.

Capsular Cataract.—When both the anterior and posterior capsules are the seat of disease, the vision is completely destroyed. When the anterior is alone opaque, the cataract is unusually convex; when the posterior, concave. Many com-

licated varieties of this form are now detailed, which we necessarily omit noticing. The proximate cause of this disease is still dubious, but it is generally considered to be the result of inflammation. The formation of it is to be prevented, if possible, by strict antiphlogistic treatment, and when an operation is advisable, one of the three modes now in use may be adopted. These are couching, extracting, and keratonixis. The first is most usually practised in this country. Extraction is called for particularly when the cataract is hard, and keratonixis in the flocculent ones of children. So much however has been written on this subject, and the details of the various operations so minutely laid down by most surgical authors, that we proceed to the diseases of the humours.

Glaucoma—A disease of the vitreous humour, exhibiting a sea-green colour. Incurable.

Synchisis.—Solution or diminished bulk of the vitreous humour. This is frequently a sequela of the excessive use of mercury, and terminates in a complete atrophy of the organ.

Dropsy of the Eye.—This arises from an increased accumulation of either the aqueous or vitreous humours, as in staphyloma the eyeball protrudes beyond the orbit. In urgent cases, paracentesis is to be performed, and the aqueous humour evacuated.

Pure Inflammation of the Eyelids.—The cellular texture of the palpebræ is subject to inflammatory action, which usually commences in the upper lid, but ultimately extends to the lower, and involves the lachrymal and meibomian glands, and unless arrested, terminates in suppuration. It is to be treated by topical bleeding and cold lotions, and when matter forms it is to be evacuated by the lancet. Should fistulæ ensue, tonics are to be given.

Erysipelatous Inflammation of the Internal Canthus.—This assumes the appearance of erysipelas in other parts, and is to be treated on the same principle.

Psorophthalmia.—This, says Dr. Frick, is always induced by the poison of the itch directly applied to the eyelids. Small pustules appear round the margin, and the roots of the cilia

are often destroyed. The eye is to be washed with tepid applications, and any of the ointments usually employed in psora made use of.

Hordeolum.—This is a phlegmonous tumour of the eyelid. At the commencement of its attack, resolution is to be attempted by cold applications, and when matter forms, it is to be evacuated. Should induration remain, ung. mercuriale is to be applied.

Granular Conjunctiva.—A very frequent termination of purulent ophthalmia is in a granulated state of the palpebral conjunctiva, which, acting like a foreign body, produces constant irritation, inducing frequently nebula of the cornea. Local bleeding by leeches is first to be employed, and if insufficient, sulph. cupri is to be applied, and the surface immediately afterwards washed with a pencil dipped in water.

Trichiasis.—The cilia, or the whole tarsus, are here inverted towards the globe. In the former case, the hairs are to be pulled out by a small forceps ; in the latter, a fold of the tarsus is to be removed by a pair of scissors.

Ectropion.—This is the reverse of the former disease, and is to be cured by excision of a fold of the conjunctival lining.

Paralysis of the Eyelid.—This is to be treated by local stimulants and blisters.

Concretions of the Eyelid.—An adhesion here exists between the eyelids and globe. The remedy is division of the connecting fibres.

The remainder of the work is devoted to diseases of the lachrymal organs. These, however, being numerous, and generally understood, we refer our readers to the work itself.

ART. II. REPORT *made to the Institute of France, on the 22d of March* 1824, *by* BARON PERCY *and* CHEVALIER CHAUSSIER, *on a Memoir presented by* M. CIVIALE, M. D. *of the Faculty of Paris: entitled "A new method of destroying the Stone in the Bladder without the operation of lithotomy."* Translated from the French by R. LA ROCHE, M. D. Philadelphia. 1824. pp. 38.

WE hasten to lay before our readers some extracts from this highly interesting memoir concerning M. Civiale's new method of destroying stone in the bladder, which, in the language of the distinguished reporters, Percy and Chaussier, "cannot fail to form an era in the healing art, and be regarded as one of its most ingenious and salutary resources." After giving a rapid sketch of the various means which have been employed for the relief of those labouring under stone, from the earliest periods down to the present, we are presented with the following account of the origin and nature of this great discovery.

"In the month of July 1818, Mr. Civiale presented to the Minister o the Interior a request for pecuniary advances, to enable him to get instruments of his invention made, which he said were adequate to the destruction of the stone in the bladder, without having recourse to the operation of lithotomy. This request was referred, some days after, to the Society of the Medical Faculty, with a memoir explanatory of many designs relative to a theory of the pocket of which he spoke, and secondly of the instrumental apparatus, which he already named lithontriptor. On the 14th of the same month, the society gave to Mr. Civiale the same two commissioners whom the Academy have lately given to him; but on that occasion they made no report, and here the matter rested.

"Nevertheless, this lithontriptic apparatus, with its present modifications and perfections, was executed the year following by a mechanician of Paris; so that the origin of this method, which now occupies us, may be traced four or five years back, although it has not acquired its full standing for much more than three years.

"The first step, and perhaps the most difficult to perform, was the introduction of a straight sound into the urethra and bladder. Desault and Mr. Deschamps, it is true, had sounded with a semi-curved catheter; and it is also true, that Lassone, in offering an anatomical description of the

urethra, has given to understand, that this tortuous but flexible canal—extensible in every point except at the exterior orifice—could assume all directions, and even become straight, by means of a straight sound. Nor is it less true that in the office of a surgeon of Portici, long brass sounds, quite straight, and which could only have been employed as catheters, were found. We must likewise observe, that the Bavarian physician had also thought it possible, and even easy, to introduce into the urethra and bladder, the silver tube of fourteen inches in length and four lines in diameter, by which he proposed to commence his operation; but no one had as yet made use of this instrument among us; unless Dr. Amusat, who openly aspires to priority on this point, and whose fine work on the urethra is well known, had employed one similar in 1818. But it is no more our purpose to examine this subject, than to decide between Mr. Civiale, to whom the whole discovery is attributed, and his colleague, Mr. James Le Roy, who claims it in part. We prefer thinking that these estimable physicians, cotemporaries, and fellow-students, without confiding in each other, entertained the same thought, in the same way that Mr. Civiale could make the same discovery as the physician of Saltzburgh, without having heard of him or of that gazette; and that having started from the same point, and followed the same route, Mr. Civiale could have arrived first.

"Consequently, it was with the straight sound that it was necessary to commence; and our physician soon acquired the habit of using it with as much facility and dexterity as the common curved catheter.

"There was no other way than that for introducing the other instruments to the stone, or allowing them the necessary movements. But what are the other instruments? One is requisite to seize the stone completely, and allow it to escape only at the will of the operator. We cannot say, in respect to this instrument, that it is truly of Mr. Civiale's invention; since we find models of it among the ball extractors described and engraved in Bartholomy Maggi, and André de la Croix; since it is met with in Franco's work, who has called it his *vesical quadruple;* and since Mr. Deschamps has had it engraved in one of the plates of his work. But if he has not altogether invented it, which he would not have found much difficulty in accomplishing, it can with propriety be asserted, that he has succeeded in giving it its most appropriate application. It is likewise a sound; but one of steel—which can enter the former—straight and hollow like it, and terminating by three branches, very elastic, curved, and remaining closed and hidden so long as they continue in the principal sound, which performs the office of their sheath. When pushed out, they open by virtue of their elasticity, and form a kind of cage or steel purse, in which the stone is sooner or later made to enter, and which is immediately shut upon it, in pulling the sound backward, as far as the volume of the extraneous body, or the direction in which it has entered will allow.

"In the second sound, or rather in the cylinder forming the forceps, there is contained a long steel stilet, which enters and turns in it with ease, and

is terminated at the end towards the bladder, and between the branches of the forceps, by a file, made in form of a strawberry, or by a small circular saw—a pyramidal trephine, according to circumstances, size, and supposed nature of the stone. This latter being firmly fixed, the moveable stilet is pushed towards it, and by means of a pulley with which it is provided at its exterior extremity, of a whirl on which it is mounted, and of a long bow with a catgut string, it is made to turn, in a manner similar to that resorted to when we wish to bore a hole through a plate of metal. No sooner is the machine in operation, than the hollow or sonorous sound of the breaking or grinding performed on the stone, according to its softness or hardness, is heard; and the patient suffers little or no pain.

" As the work progresses, the stilet is made to advance in the same proportion towards the stone; and this is done by suspending for a moment the action of the bow, which is soon resumed, in order to pulverize more and more the stony concretion, and, if the operator or patient is not too much fatigued, to hasten its destruction; but as it is intended to accomplish this in two or three operations, it is postponed to periods more or less distant. A spontaneous discharge of urine, or an injection of warm water into the bladder, usually terminates the operation, and causes to pass by the urethra, now dilated by the large sound, fragments of the stone, more or less numerous or considerable, or a muddy sediment, which soon precipitates and is easily collected.

" At first, Mr. Civiale, instead of the bow, employed a handle, which he is a good deal disposed to resume; first, because he finds it more simple and quite as convenient; and in the second place, because it is his own idea, whilst the other is the suggestion of a stranger.

" We omit, through design, a number of descriptive details, and minute precautions, which, though they concur to the *ensembie* of the operation, could not be easily understood in a simple lecture. But it is important to say, and it is necessary to be known, that we have assisted at the various and indeed almost public trials, which Mr. Civiale has made of his method, as well upon the dead as upon the living body; and that we have been completely satisfied of the truth of every thing he had previously announced to us.

" Thus, real stones having been introduced by an incision into the bladder of many dead bodies, and made fast almost without difficulty in his pincers, were broken into pieces and pulverized almost instantly by the lithontriptor.

" We remarked, in the course of these trials, that during the pulverization of the stone, the bladder is beyond the reach of any bruise from the instrument; and that we convinced ourselves there was little foundation for the fears we had entertained with regard to this point, in the operation on the living subject."

The following cases, which were witnessed by the commissioners, are sufficient to establish the efficacy of the proposed method of destroying stone in the bladder.

CASE I.

"On the 13th of January last, we proceeded to the house of Mr. Civiale, where we met several physicians and surgeons of high reputation, such as Messrs. Larrey, Giraudy, Nauche, Sue, Sedillot, and others; and where also we found Mr. Gentil, thirty-two years of age, who had suffered for the last four years from a pretty large and hard stone, of the existence of which we assured ourselves by a decisive examination; and who, full of courage and resolution, anxiously waited the commencement of a trial from which he expected to escape safe and sound, and the chances of which he had carefully weighed before submitting himself to it, and giving it the preference over the ordinary operation.

"Having placed himself upon a small bed, and the stone being felt once more, Mr. Civiale introduced down to it, and almost at the first attempt, the large strait catheter, having in its centre the forceps and the lithontriptor. The urethra offered no resistance to the passage of this sound, previously lubricated with cerat, and the stone was seized immediately. Mr. Civiale next proceeded to the trituration. Each stroke of the bow occasioned in the ears of the assistants a noise and cracking which indicated the hardness of a stone of oxalate of lime, and the promptness of its destruction. Three times the operator rested, and afforded respite to the patient, who experienced more uneasiness than real pain. After about forty minutes, Mr. Gentil left the bed alone, voided, together with a little urine, the water that had been injected into the bladder, and was much pleased to reject at the same time, numerous pieces of the stone, which was estimated to have been reduced about one-third by this operation.

"The operation was again resorted to on the 24th of the same month, and we had the satisfaction to see at the house, besides the witnesses before mentioned, our learned colleague Mr. Magendie, and Messrs. Serres and Aumont, whose names are so advantageously known. The breaking of the stone was continued, but was unattended by any circumstance worthy of remark.

"On the third of February following, the deliverance of Mr. Gentil from the stone was completed; there escaped from the washed bladder a larger quantity than ever of fragments and pulverized stone, which, when calculated together, gave the approximate size of the calculus.

"A few baths and injections, and the use of a mild and mucilaginous drink, were the only auxiliaries to an operation, for each repetition of which Mr. Gentil walked to Mr. Civiale's, and which changed this young

man, who for a long time was gloomy and suffering, into the most lively and happy of mortals.

"We have since seen Mr. Gentil several times, and have sounded him without discovering any thing. All in fact announces a perfect cure; excepting, however, the risk of a relapse, from which lithotomy itself does not preserve, and against which we can so much the less be assured, since in the operation of Mr. Civiale, the stone being minutely divided, it is easier for a fragment to remain in the bladder, and there become the nucleus of another calculus.

CASE II.

"Mr. Laurent, of Rheims, was sent to Mr. Civiale by Dr. Simons of that city, for the purpose of being operated upon for the stone, the nucleus of which was thought, agreeably to a declaration of the patient, which it would be superfluous and indiscreet to communicate here, to be a white bean. We accordingly assembled at the house of the patient on the 4th of February of the same year, accompanied by Mr. Souberbielle, a very experienced and distinguished lithotomist, who was led more by the desire of witnessing the success of the new method, than by the curiosity with which he was inspired. Some days before, Mr. Civiale had introduced into the urethra a flexible sound of small diameter, and gradually increased its size, in order to enlarge this canal, and render the introduction of the large sound of the stone-breaker more easy. This last was introduced without difficulty, after we had assured ourselves of the existence of the calculus, which we judged to be of little hardness, and of the size of a large chesnut. The bow was now put in operation, and the foreign body soon cut into, without however, occasioning any thing more than a hollow and sometimes very obscure sound. The bladder being very irritable and contractile, the operation was shortened, and repeated only on the 7th, after the application of some leeches, and the frequent use of emollient injections. In the interval, several small pieces of friable stone, and a great quantity of saline earthy sediment, had made their escape. The result of the second operation was the rejection of some pieces of the broken calculus, and of two or three small masses of an animal viscous matter, which when pressed between the fingers, gave the feeling of small and feebly agglutinated granulations.

"At a second meeting, which took place on the 10th, the forceps having seized something which appeared to possess little solidity and volume, it was discovered to be the bean that served as the nucleus of the stone. It was deprived of its incrustation, and presented a projecting portion, pretty large, and as fresh as when in full germination.

"A few days after, we assembled for the last time, with Drs. Souberbielle, Nauche, Delattre, &c. in order to terminate our undertaking. The large sound with the three branches brought away but small pieces, together with which a sort of membrane was extracted, which was at first mistaken for an empty hydatid, but afterwards recognised to be the pellicle

of the bean. Dr. Souberbielle, having sounded the bladder in all directions with a common sound, announced the existence of another fragment, but porous, small, and easy to extract. In effect, this latter fragment. having advanced beyond the neck of the bladder, it was easily extracted by Mr. Civiale by means of the long pincer, called Hunter's, but which might as well be called Hales's, as this latter was the first who made mention of it.

"Laurent, quite freed from his stone, and full of joy and happiness, left Paris a few days after for Rheims, from which place it is his intention to send us, through the medium of Dr. Simon, occasional intelligence of his health.

CASE III.

"Mr. P. of Paris, has very recently offered himself as the subject of a third observation, not less conclusive than the two former. This young man having, himself, made some preparation for the operation, either by using occasionally hot baths, or by dilating the canal of the urethra with bougies of graduated diameters, submitted to it for the first time on the 2nd of the month, in our presence, and under the eyes of Mr. Souberbielle and many of his colleagues. The stone being of the size of a pigeon's egg, or thereabouts, but of middling hardness, was seized and attacked with complete success. On the 5th, the calculus not having been discovered, this second trial had no success. Mr. Civiale having found it necessary to make use of a lithontriptor of larger size than that employed three days before, made a small incision at the mouth of the urethra; and by this means opened a free access to the instrument, which now acted with liberty and great force.

"On the 18th the third operation took place, and on that occasion Dr. Canin, ex-principal surgeon of the armies, Dr. Puzin, first surgeon of the body guards of Monsieur, the king's brother, and more than a dozen of other equally enlightened and honourable witnesses, were present.

"On this day, to introduce the lithontriptor, find and seize the calculus, although much diminished, and file a great portion of it away, was the work of a minute. Small agglomerations of gravel, and a great quantity of fine sand, comparable to that of cutlers, were rejected with the urine and injections. By means of the long pincers of Hales, three or four small packs of mucus, enveloping some calculus grains, were extracted. The cure was considered as nearly affected; and it was agreed that in a few days Mr. P. would be once more examined and sounded, and in case some fragments of the stone which had escaped the last researches were found, they could be removed by means of injections, and if necessary, by the use of the pincers; an operation which he was far from apprehending."

With becoming caution the commissioners make the following statement concerning the circumstances, under which this operation may not be attended with the same success.

"But however promising the facts may be which we have just related, it must not be believed that the result will invariably be so favourable. It will soon be seen that in addition to the temerity that would be shown in anticipating constant and unchecked success, there are cases in which the lithontriptic instruments can neither be applied nor fulfil the objects of their application. For example, if a stone has dimensions extraordinary, and not proportioned to the development of the pincers destined to seize it, it will readily be conceived that under these circumstances, which fortunately are only met with at long intervals, it would be necessary to renounce the lithontriptic method, and have recourse to the high operation. It will also be ineffectual in cases of adhering and encysted stones, which also are fortunately very seldom met, and owing to their adhesiveness and immobility, cause much less pain, and are a longer time supportable than free calculi, the only kind that are capable of being seized and destroyed by the instruments of Mr. Civiale.

"Stones having for nucleus a large metallic needle,—a tooth-pick,—an ear-pick of gold, ivory, bone, or whale-bone,—a steel awl,—a piece of pipe of horn or iron, a leaden bullet, or a fragment of bomb, &c. of which examples may be found in the memoirs of the Royal Academy of Surgery; of which we have seen examples, and placed specimens in the cabinets of the Medical Faculty of Paris; and of which before us, Collet, Moinicken, Cavillard, Mareshal, J. L. Petit, Morand, Desault, &c. had found examples in their practice. Such stones assuredly would not be destructible by our mechanism; although, to say the truth, they might by means of it be reduced in volume and weight, and thereby become a little less painful; which, however, would not remove them from the domain of lithotomy.

"By the method of Mr. Civiale, we might, it is true, succeed in breaking a prune kernel, forming the nucleus of a calculous concretion, and such as has been met with two or three times. With much more facility could we succeed with an ear of wheat, of rye, or with a piece of pine match, a fragment of wax, large beans, &c. such as lithotomists have found in the centre of several stones. In respect to French beans, we have established the fact in an unanswerable manner. But there are bladders so sensible, contractile, and shrivelled, in fact so affected, that the lithontriptic instruments could not be used in them without the greatest difficulty, and that it would be imprudent to introduce them, although it is perfectly well ascertained that the pathological state of the bladder depending very often exclusively on the presence of the stone, especially when it is *mural*, it is sufficient to remove or destroy the foreign body in order that the viscus may promptly recover.

"Children, although very young, do not appear to us to be absolutely excluded from the operation of Mr. Civiale. The small size of their penis, will, perhaps, be offered as an objection; but independently of the circum-

stance that this supposition is gratuitous, since the handling and forced elongations which the pain at the extremity of the urethra accustoms them to exercise on that part, increases singularly and prematurely its length and volume, is it not possible to make instruments proportioned to this very interesting class of calculous patients, as has been done in the other method, to which we are not sure, however, that notwithstanding this precaution, we should not be compelled to refer many cases?

"From what precedes, and anxious to preserve a just medium between enthusiasm, which exaggerates, and the prejudice opposite, which endeavours to underrate all things, we believe that the method proposed by Mr. Civiale for destroying the stone in the bladder, without having recourse to the operation of lithotomy, is equally glorious to French surgery, honourable to its author, and consoling to humanity."

We learn from the worthy translator, Dr. Roche, that preparations are making by our distinguished countryman, Dr. Physick, as well as several other surgeons, for testing the proposed improvement of Dr. Civiale, on the earliest opportunity which may prevent itself. The result will, of course, be laid at once before the public.

Medical and Philosophical Intelligence.

DOMESTIC.

Amputation at the Hip-Joint.—We are happy to announce to our readers, that the boy upon whom Dr. Mott performed the amputation at the hip-joint, in the New-York Hospital in October last, has completely recovered. The necrosis of the femur, which arose from a fracture of this bone in two places, had extended itself to the great trochanter. The thigh bone had been broken about ten months before the operation, and although a considerable quantity of new bony matter had been thrown out, the whole bone was in such a state, with several extensive sinuses leading to different parts of it, as to leave no doubt in the mind of the operator, that removing it from the cotyloid cavity, would give him the best prospect of recovery. The particulars of this operation will be given in a future number of the Journal.

Operation for extra uterine fœtus.—Dr. Mott about six weeks since, operated upon a female about thirty-four years of age, in whose abdomen

a child had remained two years and eleven months. The fœtus is in a very perfect state, and of the ordinary size of a child about seven months and a half old. It lay along under the umbilicus upon the small intestines, with the head to the left side. One delicate membrane surrounded it, which was now closely applied to the body, but easily separated, and in some parts having an aqueous fluid underneath it. From near the feet a narrow membranous attachment went to the broad ligament on the right side. Two other more acute adhesions were found to the parietes of the abdomen of the mother, one opposite the umbilicus, and the other a little to the left opposite the shoulder of the fœtus.

In about eleven hours after the operation vomiting came on, which continued about 24 hours, when she expired.

On inspecting the body, no inflammation was found in the intestines or peritoneum. She appeared to perish from the irritation of the operation.

The particulars of this interesting case will be given in a future number of our Journal.

Jukes's Apparatus improved.—The apparatus of Jukes, for removing poison from the stomach, we are gratified to state, has recently been slightly modified by Mr. Rose, an ingenious cutler of this city (of the firm of Rose & Sellers), who, by the substitution of one instead of two stop-cocks to the pipes of the syringe, brings out the same effect, with less loss of time and trouble, than in the original instrument: so that this instrument, which owes its existence to one of our countrymen, has thus been improved by a fellow-citizen, who keeps them constantly on hand for sale.

Medical Ethics.—In looking over the April number of *L'Observateur des Sciences Médicales*, edited by M. Roux, of Marseilles, we find a translation of the whole of the System of Medical Ethics published by the State Medical Society of New-York in 1823. It is well known that the Committee, to whom we are indebted for this valuable code of Ethics, consisted of Drs. Pascalis, Manley, and Steele.

FOREIGN.

On Digitaline, by M. Royer.—The active principle of Digitalis was obtained by digesting a pound of the plant of commerce in ether, first cold, and then heated under pressure: the solution was filtered and evaporated, the residuum dissolved in water and filtered, the solution treated with hydrated oxide of lead, the whole evaporated and digested in ether, which dissolved out the active principle: on evaporation it appeared as a brown pasty substance, slowly restoring the blue colour of reddened litmus paper, very bitter and very deliquescent. It is very difficult to obtain it crystal-

lized, but a drop of its solution in alcohol, evaporated on glass, over a lamp, when examined by a microscope, gave abundance of minute crystals.

That conviction might be obtained of the active nature of this substance, a grain was dissolved in about 180 grains of water, and injected into the abdomen of a rabbit; in a few minutes respiration diminished, the circulation diminished, and the animal speedily died without agitation or pain, which is the more remarkable as the rabbit is convulsed with great facility. Half a grain in 120 grains of water, ejected into the veins of a cat, caused a similar death in about 15 minutes. One grain and a half in half an ounce of water, introduced into the jugular vein of a dog, caused death in five minutes. In all these cases the arterial blood presented a decidedly venomous tint, and coagulated with difficulty.—*Brande's Quar. Journal.*

Castorina, a new animal substance.—The following substance is described by M. Bizio, in the *Giornale de Fisica*, vii. 174. Some castor was boiled in six times its weight of alcohol, 0.85, the liquor filtered when hot, and set aside for two or three days, gradually deposited a substance which had no regular form, was extremely light, and fell into powder under the fingers. Alkalies had no action on this substance, when their solutions were boiled on it, except to remove colouring matter and thus render it purer. It was but slightly soluble in cold alcohol, more, as has been seen, in hot alcohol: cold water scarcely dissolved any of it, hot water took up a small portion. The cold solution in alcohol, when spontaneously evaporated, gave the substance in small prismatic acicular crystals, some lines in length, diaphanous and white. It dissolves in ether very readily. When heated, it fuses and appears to boil, vapours arise from it, which in the open air burn brilliantly; in close vessels it gave the usual products of a vegetable substance, nothing occurring to indicate its animal origin.—*Ib.*

M. Isenflamm, of Dorpat, on the Varieties of the Osseous Tissue.—The colour of the osseous tissue, like all other tissues, undergoes changes more or less manifest in different diseases. In a fracture, for example, the two extremities of the fractured bone become covered with a reddish matter, which serves to reunite them. When the blood is washed away, and the bone macerated in water, the osseous tissue becomes white. The same is true of callus, which, in spite of its reddish hue, arising from blood-vessels, is blanched by maceration; while, by the internal exhibition of madder, it takes a red colour, as bone itself does. In rickets, the bones, besides the softening which they undergo, become transparent, and resemble the bones of new-born infants. In gout, on the contrary, the bones become hard, and approach in structure to ivory. In spina-ventosa, caries, and osteosarcoma, the bones, after being, for a time, greenish, become black, while in necrosis a portion of the bone resembles chalk. In morbid ossification of cartilages, vessels, muscles, &c. the resulting tissue is white, and altogether analogous to that of bone reunited by the process of inflammation. In

phthisis and dropsy, the bones suffer a loss of part of their marrow, become partly infiltrated with water in their cellular parts, and are, at the same time, very hard and very white, particularly in patients who die in the flower of their age. Stall and Wrisberg have observed that the bones, as well as the cartilages, and the brain of icteric patients, are strongly tinged with yellow.—*Anderson's Quarterly Journal.*

Dr. F. Lavagna's Experiments on Menstrual Blood.—This young experimenter, the nephew of the celebrated discoverer of ammonial injections in amenorrhœa, has lately analysed the blood secreted during the menstrual discharge, and has ascertained that it differs from common blood only in containing little or no fibrine.—*Ibid.*

On the Moisture of Respiration.—M. Magendie has asserted, that the moisture of the breath does not proceed from the lungs, but from the water exhaled in the aerial and nasal passages during respiration. Drs. Paoli and Regnioli were led to doubt the correctness of this from a case of tracheotomy, in which the air passing through a canula in the wound, showed the presence of moisture at 4° Reaumur. A glass applied four inches from the canula was covered with moisture. They conclude that the moisture of the breath is formed from the whole surface of the respiratory organs; that it takes place from simple exhalation from the mucous membrane; and that all the oxygen consumed is employed in forming carbonic acid gas.—*Ibid.*

M. Bayle on Rupture of the Heart.—M. Bayle has recently investigated the pathology of ruptures of the heart. The following are his remarks:—

"Although there is on record a certain number of cases of rupture of the heart, this affection is nevertheless extremely rare, in comparison with the other diseases of this organ, which are so frequent. No mention of this complaint is made in the works of Corvisart and Laennec, which have thrown such a lustre on this subject. Morgagni appears to be among the first who observed this complaint, (vide Lett. lxiv. No. 14, 15, and his Adversaria Anatomica.) Bohnius relates a case of rupture of the left ventricle near the origin of the aorta, and Bonet relates another. Senac (Treatise on the Diseases of the Heart,) quotes two cases, which did not, however, come under his own observation. In the Memoires de l'Academie des Sciences, 1732, p. 428, two cases of the same kind are recorded. In the third edition of Corvisart's work, one case is mentioned which came under the observation of Dr. Ferreus. In 1820, two distinguished physicians, Blaud and Rostan, published in the 7th volume of the Nouveau Journal de Médicine, and the other in the 68th Number of the Bibliotheque Médicale, two interesting papers, which contain each four cases of this disease. My friend, Dr. Andral, read before the Academie Royale de Médecine, in the

sitting of the 12th of April, a very curious instance of this kind. On the posterior surface of the left ventricle of the heart, there were five oblong perforations. In observing what these different cases present in common, we see—1. That of nineteen cases of rupture of the heart, fourteen occupied the left ventricle, and principally its anterior surface near the apex; three the right ventricle; one the apex; and another the inter-ventricular septum. 2. That in the majority of cases the heart was remarkably soft, and in some cases of a brownish colour around the perforation. 3. That of ten patients affected with rupture of the heart, one was between 50 and 60 years of age, another between 60 and 70, six between 70 and 80, and two between 80 and 90. 4. That of the same number of patients, eight died instantly, one at the expiration of about two hours, and another at the end of fourteen."—*Ibid.*

Influence of the Stomach on the Production of Apoplexy.—A memoir on this subject, by J. R. Richond, has lately received the prize of the Royal Society of Medicine of Bordeaux. The following are the conclusions at which the Author arrives:—

1. The stomach exercises a great influence on the brain; the close connexion which exists between them being indispensable to the execution of their functions.

2. The stomach expresses its wants to the brain, by the sensation of hunger and thirst; the former announces the necessity of excitement, the latter is the result of it.

3. Besides the functions of nutrition, which it effectually fulfils, the stomach likewise tends to keep the brain in the condition favourable for its action: it is, as it were, the balance of life.

4. The necessity of excitement, experienced by the mucous membrane of the digestive organs, is one of the most imperious, and one, the satisfying of which is the most necessary to the regularity of all the movements.

5. According as this excitement is more or less active, so is the action of the brain more or less energetic. To be convinced of this, it is only necessary to observe the effects of spiritous potations.

6. Drunkenness is the result of cerebral excitement, caused by the sympathetic action of the stimulated gastric membrane.

7. The ideas relative to taste are generally subordinate to the state of the mucous membrane of the digestive canal; and very frequently the moral is modified according to the sensations which the brain then perceives.

8. The influence of the stomach on the brain may be appreciated in the state of sleep, as well as watching.

9. In the state of disease, the stomach communicates the suffering to the brain; and from this participation results the development of cerebral phenomena, more or less perceptible to the observer.

10. These phenomena are not always purely sympathetic: the brain and its membranes are really affected more frequently than is supposed.

11. When the gastric irritation is chronic, and of long standing, there are almost always alterations in the brain or its coverings, which, by their sudden aggravation, may give rise to mania, epilepsy, and sometimes apoplexy.

12. This sudden aggravation which produces apoplexy, is most frequently the result of an excitement of the stomach communicated to the brain: it is in this way that it very frequently takes place during a repast, after indigestion, excess in spiritous liquors, the action of an emetic, &c.

13. The extravasation of blood may sometimes be the result of this, but its existence is only eventual, and it does not constitute the essence of the malady.

14. This extravasation, when it happens, is at the spot where the irritation predominated; because the vessels of this part, always gorged with the blood which flowed to it, have become dilated and softened, and thus rendered more liable to rupture.

15. If there be a partial softening of the brain, the blood may escape at this point, and produce those caverns which have so improperly been regarded as the product of hemorrhagy alone.

16. Very often, in chronic gastrites, we meet with evident alterations of the heart, which are not to be regarded as independent, but which are the result of the sympathetic transmission of the irritation of the stomach.

17. The treatment of apoplexy ought to be entirely antiphlogistic, for the disease is one of irritation.

18. Emetics, purgatives, and blisters, are, for the most part, injurious. When they succeed, it is by producing a revulsion; but this is rarely obtained, and most frequently the irritation which ought to produce it, turns to the increase of the disease it was intended to combat.

19. To attempt to procure this revulsion, would be to subject the patient to great danger, without much chance of success. It is easy, in truth, to conceive that a considerable alteration of the brain, or its membranes, cannot be cured in a rapid manner; and that the displacement of the irritation which has caused it must be very difficult, particularly if the means employed act upon a surface connected so intimately with the brain as the mucous membrane of the stomach.

20. All the substances which are regarded as proper to restore strength, to give tone, to diminish stupor, debility, &c. must be proscribed with care, so long as any irritation of the brain and stomach exists.

21. To have recourse to excitants, such as electricity, the nox vomica, &c. against consecutive paralysis, is to have an idea of the disease entirely false. These means cannot repair the ravages which exist in the brain, whilst they are of a nature to increase and aggravate them.

22. During convalescence, the stomach merits very particular attention; the practitioner ought never to forget that too much stimulation may produce fatal mischief. The lightest diet, mild drinks, an exact observance of all the principles of hygiene, and the removal of the causes capable of ex-

citing the stomach and brain,—such are the meaes most proper to promote a recovery.

23. The employment of the means proper to calm cerebral and gastric irritation, which generally exist in persons having a predisposition to apoplexy, is the only anti-apoplectic to be trusted.—*Lon. Med. & Phys. Journ.*

Effects of Lightning on the Human Body.—The following is an extract from an account by Dr. Tilesius, of Mulhauzen, given in *Schweigger's Journal.*

"Two vehicles were passing along a narrow road embedded in a forest: in the first were two brothers of the name of Teele, one aged thirty-three years, the other twenty-nine; in the second was M. Teele the nephew, aged twenty years, and M. Decker. The lightning struck successively the first horse, the two brothers, M. Decker, and his companion; the last did not survive. The horse remained dead on the spot: the skin on the lower part of its belly was torn, the mouth open and the teeth black.

"The lightning passed to the younger Teele by his umbrella, which, with his watch, was thrown twenty-four steps off; the vehicle had a hole made in it six inches in diameter. The body, carried to the nearest village, was put into a warm bath and rubbed; blood flowed from the nose, mouth, and ears, but no signs of life appeared. The mouth and nose were black; the skin and muscles of the arms and hands, both of which held the umbrella, were furrowed to the bone; the sleeves of his clothes were torn; the lesions of the skin were not like those produced in burns; the skin appeared as if it had been raised by rapid rubbing, and the clothes bore no trace of burning, but seemed as if torn by a sharp point. M. Decker, who was in the same car, received at the same moment, a blow on the stomach so violent that he was thrown out, and remained insensible for half an hour. When examined, the place on which he felt the blow was found very red but unwounded: he very speedily recovered.

"The two brothers were sitting side by side when struck; the lightning first reached the head of the elder brother, tore his velvet cap into several pieces, glanced over the temporal bone about an inch above the left ear, then behind that ear, and flaying the skin slightly, descended to the neck; it traversed the nape of the neck obliquely, and ascended to the right ear, the interior of which was as if scratched; it then went by the right shoulder, beneath the chin, over the right breast along the arm, and returning to the back, descended along the vertebral column to the sacrum. In this last part of its course, the skin was not torn, but only slightly raised, and much reddened; marks of the same kind were across the arms, and with the torn clothes, showed the zig-zag path of the lightning as it had passed alternately from the right side of the younger brother to the left side of the elder. It continued its course on the former from the part where it had come in contact with some pieces of metal contained in his pocket, and at

which place it had raised the skin of the muscles of the side, for a space as large as a hand; it then crossed the stomach to the left side, and passed over the internal surface of the thigh, knee, and calf of the leg. The width of the trace marked by the lightning, was generally about two inches; the wounds were most extensive and deep at the intersections of this trace; many of them were very painful, and suppurated abundantly; the skin had been closely rolled up on the right and left by the rapid passage of the lightning. The wounds did not bleed; and on healing, those phenomena only took place which accompanied the simple formation of skin. Nothing indicated a lesion of the organs due to fire or heat, but the effect was just such as would have been produced by the passage of a bullet over the surface.

"The two brothers, on becoming sensible, felt excessively sick, and after drinking some tea, vomited several times, throwing out a little blood. No fever occurred. The eldest was quite deaf on the day of the accident, but recovered his hearing, in part, on the morrow. No paralysis occurred in the limbs struck by the lightning, and the wounds cicatrized in a few weeks.

"The accident happened in May 1821. Twelve months afterwards, the elder brother remained affected by deafness, which varied with the weather; he had a strong tendency to sleep, and sometimes slept twenty-fours hours if not awakened. The younger, ultimately, had an inflammatory fever, and was subject to a periodical depression, of which he had previously felt nothing; and, generally, a much stronger impression had been made on the nervous system of both, than from the vigour of their constitution might have been expected."—*Brande's Quar. Journal.*

Wound through the Chest, piercing the Diaphragm and Stomach.—On the 7th of May, 1824, a man, about twenty years of age, on the evening of his wedding-day, plunged a very sharp cook's knife in the interval between the sixth and seventh rib, on the left side, and towards the sternum. He immediately fainted away. The medical men who were called in, judging from the situation and direction of the wounds, and the marks of blood upon the knife, that it had penetrated about two and a half inches; the symptoms announced an internal hemorrhage, which appeared to cease for a time: it, however, soon recurred, and the man died thirty-four hours after committing this desperate act. The body being opened, the following appearances presented themselves:—The wound had penetrated the cavity of the thorax for the space of an inch, but the lung was not wounded; yet there was a considerable effusion of blood on that side, arising from the wound of an intercostal artery. At the spot where the diaphragm was wounded, a sound was stopped in consequence of the protrusion of a portion of omentum. In the abdomen, the stomach was found pierced to the extent of three lines, at its anterior and superior part; and an effusion

of blood had taken place into the colon, extending to the hypogastric region.

The conclusion which the reporter of this case (Dr. Millet) draws from this examination, is, that it tends to confirm the experiment of Dr. Williams, and goes to prove that the lungs do not, in their natural state, fill the interior of the pleura in the act of respiration; for, had that been the case in the instance above related, the lung could not have escaped without being wounded.—*Lond. Med. & Phys. Jour.*

Effect of Castration in certain Animals.—M. Faneau Delacour, of Souzay, has performed a number of experiments upon sheep and pullets, with a view of determining the effect of castration upon the animal economy, conceiving that the loss of organs so important as the testicles, could not take place without materially affecting the health; which opinion was strengthened by considering the sudden evils often arising from more trifling causes,—such as the disappearance of eruptions, or the drying up of a long-established ulcer.

M. Delacour had eighty pullets castrated in his presence: eleven of these immediately exhibited well-marked signs of cerebral affection, and in three others the symptoms were observable, but not to so great a degree. Of eight which became mad, four of the worst, as well as two out of three which were threatened with apoplexy, were cupped upon the rump, and an actual cautery applied on each side of the cupping-glass; and in the four first instances, a cautery was also applied on the head. All these recovered: whereas, one left entirely to the efforts of nature died on the third day, the brain exhibiting the strongest marks of inflammation.

The same phenomena were observable among a flock of sheep, and in a greater proportion. The same remedies were made use of in seven of these animals, and they all recovered on the day the cauteries were made: whereas, two left entirely to nature died,—one on the fourth day, with all the marks of madness; the other on the second day, in a state of coma. The examination of the heads showed, in the first instance, a violent state of inflammation of the brain and its membranes: the brain of the second was softened, and the ventricles filled with a fluid resembling the white of an egg a little coloured.—*Ibid.*

Detection of Hydrocyanic Acid in the Human Body.—M. Lassaigne has published a long, but very interesting, paper on this subject, of which we can now do no more than give the conclusions deduced from his experiments and observations; which are these—

1st. That, by chemical means, it is possible to recognise, in a distilled aqueous liquor, the presence of hydrocyanic acid, in the proportion of one 20,000th part of the weight of the water.

2d. That in animals poisoned by this acid, it is possible, at the end of

eighteen and forty-eight hours, or even a longer period, to detect its presence.

3d. That it is in the viscera where the substance has been primarily taken, that it is to be discovered.

4th. That, in the brain, heart, and spinal marrow, it has not been possible to detect the most minute quantity, although the odour would induce the suspicion of its presence.

M. Lassaigne is aware that M. Itard's experiments led him to the conclusion, that hydrocyanic acid might be spontaneously developed in the body; but, as the sense of smell alone has been appealed to as a proof of this fact, M. Lassaigne questions its being correct; especially as M. Robiquet has shown that the oil of the lauro-cerasus, which has a strong odour of bitter almonds, does not owe this to the small quantity of hydrocyanic acid it contains, but to a volatile oil. Added to which, M. Lassaigne has carefully examined the evacuations of the human subject; the matters contained in the intestines of various animals, especially of dogs, who have died of inflammatory diseases; as well asanimal substances in different degrees of putrefaction, and has never been able to detect the presence of this acid.—*Ibid.*

Of the Efficacy of the Root of the Artemisia Vulgaris (Mug-wort) in Epilepsy. By Professor C. G. Hufeland.—Dr. Burdach, of Wiebal, near Sorau, having been in the habit of employing the root of this plant in epilepsy, Professor Hufeland was induced to try its effects.

Dr. Burdach recommends the root to be gathered about the middle of October, to be dried in the shade without washing, and not to be powdered until shortly before its exhibition. It should be taken in powder, within half an hour of the expected accession of the paroxysm can be foreseen, in the dose of a coffee-spoonful (from 50 to 70 grains) in a little warm beer: the patient ought to be placed in bed, well covered, and to drink warm beer. Copious perspiration is the result, which having subsided, the patient may leave his bed.

Dr. Burdach asserts that the first dose generally procures some relief, and sometimes performs a complete cure. He advises the dose of this medicine to be repeated on alternate days.

Professor Hufeland prescribed this remedy in ten cases of epilepsy in the "Polyclinical Institution of Berlin." Of these, three were perfectly cured, three obtained relief, the paroxysms becoming less frequent, and much less severe; and four derived no advantage from its use. These experiments deserve to be repeated in this country; for, according to the observations of Hufeland and Burdach, this substance seems to possess more efficacy in the disease than *a priori* reasoning would lead us to expect from any single remedy, especially when we connect the pathology of the disorder with the means of remedying it.

We subjoin an abstract of some of the cases published by Professor Heuf-

land and Dr. Burdach, as we conceive that the result entitles this substance to the favourable notice of practitioners. The experience of Hufeland being in its favour, is no small recommendation :—

Case 1st.—A female, aged forty-one, who had been hysterical, became subject to attacks of epilepsy. These attacks seem to have been consequent on chagrin, irregular menstruation, and sedentary life. She was received into the hospital under the care of Hufeland, and during a month's residence in the institution, she experienced six epileptic fits. As each of the paroxysms was ushered in with general uneasiness and agitation, the powdered root of the Artemisia was exhibited on the appearance of these symptoms. The first dose was taken at 11 o'clock at night, at the moment when the usual forerunners of the fit declared its accession. A very abundant perspiration supervened, which continued till morning. The patient had no sleep; she changed her linen and felt much relieved. On the following day, however, at two of the afternoon, she was suddenly seized with a paroxysm, which an hour afterwards was succeeded by a second equally violent as the former; she then fell into a profound sleep, which continued until the morning following. Seventy-two hours after the exhibition of the first dose, a second was given in warm beer. A general, very abundant, and fœtid perspiration supervened; and in the morning she had a copious discharge of yellowish urine, which did not deposit any sediment. She felt greatly relieved. She left the hospital in the following month; and at the end of two years M. Hufeland ascertained that she had since enjoyed perfect health, and had not had any attack of epilepsy.

Case 2d.—A girl, seventeen years of age, an epileptic from her fifth year, in consequence of a blow on the head, had a paroxysm daily at the same hour. One dose of the Artemisia vulgaris, which was followed by perspiration, cured the disease.

Case 3d.—A girl, eighteen years of age, epileptic from the age of two years, in whom the paroxysms had been increasing in frequency and severity since their first appearance, until she had as many as twelve attacks in the day, took the Artemisia in the manner described above. After the third dose, the paroxysms were reduced to two in the day, and these were of short duration. No further report was given of this case.

Case 4th.—A man, twenty-nine years of age, was subject to a periodical epilepsy during four years. The disease appeared after a fall into the water when he was drunk. Two doses of the Artemisia completely removed the disorder.—*Lon. Med. Repos.*

Tuberculous Affection of the Brain. By Dr. Ozanam, Physician to the Hotel-Dieu, Lyon.—A. Geoffroi, aged twenty-seven, complained ever since December, 1821, of a continual pain in the left side of his head. In the month of January following he was seized with a violent attack of epilepsy. From that period to the thirteenth of the month of November following, he had six

similar attacks: at this period he was admitted into the Hotel-Dieu. He remained there sixteen days without having another attack, and went out of the hospital in tolerable health. In the month of December the pain of his head was increased, and continued so during the following year. But about the month of October 1823, he perceived a considerable tumour in the left temple: from this period he became fearful and sluggish, and experienced mental alienation. Although a moderate pressure of the tumour did not produce much pain, yet he dreaded it to be touched. On the 11th of December he was seized with a violent fit of epilepsy, at the end of which he was carried to the Hotel-Dieu.

On his admission the tumour on his temple was slightly prominent, and two inches in circumference, with œdema of the surrounding parts and of the eyelids; and it was found to pulsate synchronously with the pulse. The pulsations ceased on compression of the common carotid, but continued when pressure was made on the fascial and temporal branches. The tumour itself was soft, fluctuating, without change of the colour of the skin which covered it, and circumscribed by a hard and bony margin. It elevated the thin and aponeurotic portion of the temporal muscle. A state of continual spasmodic construction of the muscles of the neck and of the pharynx prevented deglutition, his face was Hippocratic, and his skin hot and dry. He died fifteen days after his admission into the hospital. The treatment was antiphlogstic.

Dissection.—The cranium removed with precaution, presented the membranes in a state of inflammation, and the arachnoid injected. The left parietal bone was completely eroded, the resulting perforation being ten lines in diameter. The cerebral subtance allowed numerous drops of blood to escape, when the longitudinal and transverse sections of it were made. A non-suppurated tubercle adhered to the cerebral pulp, and elevated the dura mater; it had pushed before it the portion of this membrane where it was lodged, forming a hernia with the dura mater and the external periosteum. The whole of that part of the brain corresponding to the temporal fossa was softened and disorganized; it enclosed six tubercles, of the size of a small nut, hard, schirrous, and having at their centres a yellowish gravelly concretion. All the other viscera were sound.

This singular tumour presented many of the characters of an aneurism of the temporal artery.—*Ibid.*

An account of the Native Oil of Laurel, by Dr. Hancock, *of Demerary.*—This substance, which has been very injudiciously termed *Azeyte de Sassafras*, an appellation which tends to confound it with the essential oil, yielded by the *Laurus Sassafras* of the Northern Continent of America, affords, so far as my knowledge extends, an extraordinary and solitary instance of the production of a perfectly volatile liquid, without the aid of art. Substituting for the appellation to which I have objected, the provi-

sional name "*Native Oil of Laurel*," I shall describe the method of procuring it, and enumerate its principal chemical and medicinal properties, so far as they have been investigated and examined.

The *Native Oil* is yielded by a tree of considerable magnitude; its wood is aromatic, compact in its texture, and of a brownish colour, and its roots abound with essential oil.

This tree, which is found in the vast forests that cover the flat and fertile regions between the Oronoko and the Parima, has from an analogy already alluded to, been supposed to belong to the natural order, *Laurineæ*: and though Humboldt and Bonpland do not seem to have been acquainted with its singular and important produce, its botanical characters may very possibly have been described in their *Plantes Equinoxiales*, under the *Genera Oeotea*, *Pereea*, or *Litsea*. This question I am, however, unable to solve, as I have never seen the parts of fructification.

The *Native Oil of Laurel* is procured by striking with an axe the proper vessel, in the internal layers of the bark, while a calabash is held to receive the fluid. So obscure, however, are the indications of these reservoirs, that the Indians (with perhaps a little of their usual exaggeration) assert, that a person unacquainted with the art may hew down a hundred trees, without collecting a drop of the precious fluid. In many of its properties, the *Native Oil* resembles the essential oil obtained by distillation and other artificial processes; it is, however, more volatile, and highly rectified, than any of them; its specific gravity hardly exceeding that of alcohol. When pure, it is colourless and transparent: its taste is warm and pungent; its odour aromatic, and closely allied to that of the oily and resinous juice of the *Coniferæ*. It is volatile, and evaporates without residuum, at the atmospheric temperature. It is inflammable, burning entirely away, and except when mixed with alcohol, gives out in its combustion a dense smoke. Neither the alkalies nor acids seem to exert any sensible action upon the *Native Oil*. Upon dropping into it sulphuric acid, the latter assumes a momentary brownish tinge, but soon regains its transparency, remaining immiscible at the bottom of the vessel. The *Oil of Laurel* dissolves camphor, caoutchouc, wax, and resins; and readily combines with the volatile and fixed oils. It is insoluble in water, soluble in alcohol, and in ether. Though the specific gravity of the oil exceeds that of ether, yet the compound formed, by combining them, in the proportion of one part of the former to two of the latter, floats upon the surface of pure ether, and may therefore be the lightest of all known liquids.

With respect to the medicinal properties of the *Native Oil*, it bears, when externally applied, the character of a powerful discutient: and appears, when exhibited internally, to be diaphoretic, diuretic, and resolvent; by many it is believed to be analeptic, alterative, anodyne; and to promote the exfoliation of carious bones.

Without listening to the extravagant reports of the Indians, who exalt it into a Panacea, we must admit that its efficacy has been demonstrated in

cases of rheumatism, swellings of the joints, cold tumours, pains in the limbs, and in various disorders supposed to originate in a vitiated state of the blood (mala sangre). In all these cases it is exhibited in doses of twenty to forty drops, on sugar, twice a-day; accompanied by frequent and long-continued friction of the parts affected with the oil, while the body is kept moderately warm, and a free use of diluting drinks prescribed to the patient. The same practice is said to have been attended with the happiest effect in paralytic disorders; for this I cannot vouch, but have found it a valuable remedy in cases of nervous and rheumatic headache, sprains, and bruises. A decoction of the root has been employed as an alterative, in various chronic complaints, and with much success.

I am fully aware of the re-action that often results from over-excited and disappointed expectations, and of the discredit into which a new remedy frequently falls, in consequence of the unmerited encomiums which those who bring it into notice have injudiciously bestowed upon its virtues.

> Quidquid excessit modum,
> Pendet instabili loco.

However slight the credibility we may feel inclined to attach to the evidence of the Indians, upon which our knowledge of the medicinal properties of the *Native Oil* almost entirely reposes, the information derived from experience surely claims that attention, and justly challenges that examination, which we should not hesitate to bestow on the speculations of the mere theorist. Let inquiries be instituted, and experiments be made by those who, by situation and scientific attainments, are qualified for the task. By these investigations, it may not only be ascertained what degree of confidence ought to be reposed in the unqualified encomiums which the Indians lavish upon this anomalous production, but properties unknown to them may be discovered, and its history, which they have been accused (perhaps unjustly) of involving in obscurity, be satisfactorily elucidated. To the chemist and vegetable physiologist, in particular, the *Native Oil of Laurel*, elaborated by the unassisted hand of Nature, in a state of purity, which the operose processes of art may equal, but cannot surpass, presents an interesting subject of inquiry, and a wide field of speculation.—*Brande's Quar. Journal.*

M. Bayle's Case of Softening of the Spinal Marrow.—A woman, aged 52, a sempstress, had at first lancinating pains in the chest and abdomen, and afterwards in the pelvis and lower extremities, inability of walking, and convulsive affections of the legs, with shooting pains. At the base of the tenth dorsal vertebra was a tumour, in form like the brain, and posterior to the spinal marrow. Some time before death the legs were bent back with the heels pressed against the nates. After long suffering she died.

Dissection.—"Lungs excavated, and filled with tubercles. Left lung adhered throughout to the pleura costalis of the side attacked with the inflammation. The articulations above-mentioned contained a purulent liquid:

their cartilages were irregular, and appeared destroyed in certain points. The brain was sound; the cerebellum in good state, excepting that on each lobe, posteriorly, there was a small band from an inch and a half to two inches long, of a white, firm, hard substance, composed of decussated fibres, and which adhered very intimately to each other.

"The spinal marrow was healthy as far as the level of the tenth dorsal vertebra, where there was found on its posterior part a tumour contained between two small folds of the arachnoid. This oblong tumour, about two inches in length, and placed lengthways in the spinal canal, was slightly furrowed on its surface, of rather a firm consistence, a reddish white colour, intersected by small vessels which penetrated into its interior. When cut, it appeared composed of a homogeneous matter, somewhat resembling the substance of the brain, but more firm, of a light rose colour, and presenting when torn, small but very distinct granulations. There were numerous minute vessels going in every direction; the tumour did not adhere in any point to the spinal marrow, which in every part corresponding to it, was softened to the consistence of thick paste, to the extent of about two inches, and which towards the most bulky part of the tumour, appeared cut transversely, so that the two portions separated by a small space, representing two cones resting against each other by their tops. After a very attentive examination of the softened portion of the marrow, no single fibre could be discovered which had not undergone this alteration. The limbs were wasted; the nerves did not appear diminished in size."—*Quar. Journ.*

Dr. Quadri's Case of Diplopia.—The following singular case of Double Vision, cured by operation, is given in the Medical Observations, by Dr. Quadri, of Naples:—

"After having used all the most energetic remedies in vain, he conceived that the disease was owing to some affection of the optic nerves, and ordered the patient to take Richter's pills. The patient, however, became worse; and, on examining the eye, the iris appeared sound, the movements of the pupil regular and rapid; there was no spectra, or small objects, complained of as floating before the eyes, so common in cases where the nerves are affected. Dr. Quadri conceived the disease to arise from pressure, made by a superabundant quantity of cellular substance at the inner angle of the right caruncle, which threw the eye out of the centre of the orbit; and he was confirmed in that opinion upon finding that the diplopia disappeared when the eye was carried inwards or upwards. The author, therefore, laid open the right caruncle, and by means of a small pair of forceps, took away three small pieces of cellular substance; the wound healed by the first intention, and the patient was relieved. This encouraged M. Quadri to repeat the operation some few days after, in the same manner, and to the same extent. After this second operation, the wound was closed with a point of suture and adhesive plaster. The inflammation after this operation was more considerable, but was relieved by leeches,

and the wound healed in a few days. The disease was quite cured. M. Quadri conceives that the inflammation which took place after the last operation, increased the density of the cellular substance so as to destroy the tendency to grow, which it had before evinced."—*Anderson's Quart. Jour.*

On Fumigation. By M. Faraday, F. R. S.——I was called on some months since to direct and superintend the fumigation of the general Penetentiary at Milbank; in doing which some precautions and arrangements suggested themselves, which I have thought might be usefully made known for the information of those who may have occasion to apply disinfecting agents to the purification of buildings, either large or small.

On examining a building to be fumigated, it is necessary to estimate the surface exposed to the infectious vapours, as well as the capacity of the structure. When the air of a place is impregnated with infectious matter, the surface of the walls, &c. will absorb more or less of it in proportion as it is more or less extensive, as it approaches nearer to or is farther from the source of infection, and also in some degree according to its nature.

The general arrangement of the Penitentiary was favourable to its complete and perfect fumigation; for, though of great magnitude, yet its division into smaller parts as galleries, towers, staircases, &c., most of which were glazed, and all of which could be closed by doors so as to separate them from each other, rendered the successive application of the means employed easy and convenient.

After deciding upon fumigation by chlorine, the next object was to ascertain the most favourable mode of applying it; and I was desirous for many reasons of obtaining a gradual and successive development of the disinfecting agent, rather than a sudden and short one. The latter mode, though it would have filled the building at once, and probably very effectually, yet would seriously have incommoded the operators, and would also soon have disappeared in consequence of absorption by the limed walls, and from dissipation through apertures that would inevitably remain unclosed in different parts of the building: whilst the former mode, by continually supplying the disinfecting agent to the atmosphere of the place for a length of time, would enable it better to act on the bedding, clothing, and other articles left in the cells, and allow it also more perfectly to penetrate to every part of the building itself.

The materials used were those generally employed, namely, common salt, oxide of manganese in powder, and oil of vitriol. Upon making experiments with these substances as furnished by the dealer for the fumigation, I found that a mixture of one part by weight of common salt and one part of the oxide of manganese, when acted upon by two parts of oil of vitriol previously mixed with one part (by weight) of water, and left till cold, produced the best results. Such a mixture made at temperatures of 60° Fahr. liberated no muriatic acid; but in a few minutes began to evolve chlorine, and continued to do so for four days. When examined on the

fifth day, and urged by heat, so as to cause the liberation of all the chlorine that could be afforded by it, only a small proportion was obtained. Such a mixture may therefore be considered as having liberated its chlorine gradually but perfectly, without the application of any extraneous heat; and is therefore very proper for extensive fumigation.

The vessels in which the mixture is to be made should be flat, and such as, being economical, are least acted on by the chlorine or acid. Common red pans were used in the Penitentiary; for many being required at once, better earthen ware would have been too expensive. They held each about four quarts.

Preparatory to the fumigation a quantity of the salt was turned out, the lumps broken down by a mallet until the whole was in powder, and then an equal weight of the oxide of manganese added, and the whole well mixed. The acid and water were mixed in a wooden tub, the water being put in first, then about half the acid added, stirring at the same time. When the heat produced had been dissipated, which happened in a few hours, the rest of the acid was added, stirring as before, and the whole left till cold. The men used measures in mixing the acid and water, and were told to take rather less of water than of acid, 9 measures to 10 being nearly the quantities required. Any slight departure from these proportions would be of no consequence. The pans were then charged, each with about 3⅛lb. of the mixed salt and manganese, and distributed at proper intervals along the galleries, &c., care having been taken previously to close the doors and windows, and to stop with mats or rugs all apertures to which access could be had, especially key-holes, through which there was any draft. The diluted acid being cold, was then carried in cans or jugs, and measured out in the proportion of 4½ lb. to each pan, the mixture being well stirred with a stick, and left to itself. This was done without any inconvenience to the operator, except when the acid was applied too warm: there was abundant time to go from pan to pan, and to close the various galleries in succession. On entering a gallery a few minutes after it had been thus treated, the general diffusion of the chlorine in the atmosphere was sufficiently evident. In half an hour it was often almost impossible to enter, and frequently on looking along the gallery (150 feet in length), the yellow tint of the atmosphere could easily be perceived. Up to the fifth day the odour of the chlorine could generally be observed in the building. After the sixth the pans were removed, though sometimes with difficulty, to be emptied and used elsewhere; and the place fumigated, had its windows and doors thrown open.

It was estimated that the charge of each pan would yield about 1 lb. of chlorine, or 5½ cubical feet. The whole quantity of materials used was 700 lb. of common salt, 700 lb. oxide of manganese, and 1400 lb. of oil of vitriol. The space requiring fumigation amounted to nearly 2,000,000 cubical feet, and the surface of the walls, floors, ceilings, &c., exclusive of furniture, bedding, &c., was about 1,200,000 square feet. This surface

was principally stone and brick, most of which had been lime-washed. The space was divided into 72 galleries of 150 feet each in length, and towers, passages, chapel, &c., equivalent to about 13 galleries more. The number of cells, rooms, &c. was nearly 1200.

It was desirable for many reasons that the Penitentiary should be fumigated in the most unexceptionable manner, and the means employed were therefore applied to an extent probably far beyond that requisite to the destruction of any miasmata that might be within it. The proportion of chlorine evolved to the size and surface of the building, may be considered therefore as sufficient for a case of the most excessive kind; and, though the limits are guessed at rather than judged of by any well-founded rule, yet I should consider from one-half to one-fourth of the chlorine as quite sufficient for any of the usual cases where fumigation is required.—*Brande's Quar. Journal.*

Case in which Asphyxia was produced by the development of a Tumour in the Larynx. By G. Ferrus, Physician to Salpêtrière.

A female, aged forty, was admitted into the *Salpêtrière*, in June 1820, after an attempt to commit suicide: but during her stay in the hospital, she evinced no sign of mental alienation. She had been greatly addicted to venereal excesses, and to the abuse of spiritous liquors. Her constitution was robust. Upon her entrance into the hospital, it was remarked that the tone of her voice was feeble and indistinct. This symptom continued to increase for eighteen months, until respiration became extremely difficult, her face injected, and the eyes prominent. About seventeen months from the period of her admission, she began to complain of pain towards the superior opening of the larynx. Respiration had then become very painful and difficult, and cerebral congestion was eminent. General and local blood-letting were employed, but without benefit. Her symptoms, about this time, presented accessions of severity, and assumed the character of the most violent paroxysms of asthma. The pain and difficulty of respiration felt at the larynx, and an obstacle felt there to the entrance of air into the lungs, pointed it out as the seat of the disease; yet no mechanical obstruction from the pressure of tumours, or from other causes, could be detected; whilst an abundant mucous expectoration caused an affection of the bronchiæ, and even of the lungs, to be suspected to form a part, if not the whole of the ailment. It was, however, decided, from the symptoms referrible to the larynx, that the disease most nearly resembled œdema of the glottis. The intensity of the symptoms increased until asphyxia took place. In this state tracheotomy was performed; but the attempts made to resuscitate the patient did not succeed.

Dissection twenty-four hours after death.—The cavity of the cranium presented nothing remarkable beyond a sanguineous injection of the brain, and the cerebellum of an unusually large size. The vessels of this organ were also considerably injected.

The abdominal viscera were sound. The lungs were healthy, excepting a slight adhesion on the right side, at a part were a small mass of tubercles was developed. The trachea and larynx were removed in order to be examined with accuracy. Having opened the posterior parietes of the trachea along its whole extent, the first object which attracted attention was the occlusion of the glottis by a tumour the size of a large almond. This tumour adhered by a somewhat large base to two fibro-membranous folds, which form the left laryngeal ventricle, and at the angle formed by the thyroid cartilage. Its surface was irregular, tuberculated, and possessing the same consistence as fungous tumours. Its colour was similar to the mucous membrane covering the rest of the larynx. Another tumour of the same nature, but of a very small size, was situated on the opposite side of the larynx: it was inserted a little higher up than the large tumour.

The appearance of these tumours led to the suspicion that a syphilitic affection existed in this individual, an opinion which was strengthened by her character, and which an examination of the genital organs confirmed.

In this case, had tracheotomy been earlier performed, the existence of this tumour might have been ascertained, and its extirpation might have been even accomplished.—*Lon. Med. Repos.*

NOTICES.

University of the State of New-York.—The usual courses of Lectures in the two Colleges of Physicians and Surgeons attached to the University of the State, were commenced on the first Monday of November last. In the New-York College, the number of Students is about two hundred. In the College at Fairfield, the number is one hundred and twenty. Situated as this latter Institution is, in the interior of our State, and deprived, as it necessarily is, of many of the artificial advantages connected with a large city, we are both surprised and gratified to learn its present flourishing condition. The great increase of Students which it has received since the last year, may be looked upon as a pretty decisive expression of public opinion in its favour. We sincerely hope that its learned and enterprising Professors may persevere in the honourable course which they are at present pursuing. If they do, they may repose with certainty in the conviction that they must triumph over open as well as secret hostility.

To Readers and Correspondents.—Our next Number will contain communications from Drs. *S. W. Moore*, *L. C. Beck*, *F. Ludlow*, *P. S. Townsend*, *F. G. King*, &c. &c.; together with Reviews of Dr. *Smith's* work on the Etiology and Philosophy of Epidemics, and Dr. *Godman's* Anatomical Investigations.

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THE

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JOHN W. FRANCIS, M. D.

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FELLOW OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF NEW-YORK.

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